

Flight, July 20, 1912.

FLIGHT

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A NEW COMER AT HENDON AERODROME.—The big Breguet warplane flying under the pilchage of M. Moineau.

EDITORIAL COMMENT.

An Empire Fund for Military Aviation.

It is impossible to read the letter of Lady Loraine, which has been sent to the Press, and which we publish elsewhere in this issue, without feeling how deep is the pathos of it all. In the time of her greatest distress there is but one thought which is manifestly uppermost in the mind of this stricken mother—how best can the sacrifice which mother and son have offered up on the altar of country be best turned to that country's good? If there were nothing practical in Lady Loraine's suggestion for the institution of an Empire Fund for the furtherance of military aviation, her letter would stand out as a shining example of that unselfish patriotism which, more than any factor or combination of factors, has placed the British Empire in the proud position it occupies at the head of the nations. But the proposal is something apart from the unpractical, if possibly inspired outpourings of a mind stricken by grief, and anxious to find forgetfulness in some work which will absorb thought and energy. On the contrary, it has a basis of thoroughly sound and practical politics, and comes at a most opportune time.

Readers of *FLIGHT* may remember that a year ago, before there was any indication that the Government was alive to the importance of putting our aerial defences on a properly sound basis, we deprecated the rushing in of private enterprise to relieve the State of what was its manifest duty. That, we submit was a thoroughly sound argument at the time. When the body politic is being urged to do something which it has no desire to do, one of the best possible sedatives lies in the getting of the agitators to do the work for themselves. It creates an atmosphere of doing something, which leads on to the impression that things are moving in the required direction and before long the original object of the agitation is lost to sight and those primarily responsible are able to sink back in their chairs and thank their stars that the agitators have ceased from worrying. But when once the body—which is in this case the Government—has frankly realised its responsibilities, and has set out to go through with its appointed task, within its financial or other limitations, then the time has come when it may be helped by private enterprise to carry out that task the more efficiently. That argument applies, we think, very forcefully in this present case of military aviation. It is passing strange, but in spite of all that has been written and said publicly with regard to the whole subject there is, unfortunately, no denying the fact that the bulk of the people still regard it with apparent apathy. Man assimilates his lessons very slowly in the bulk, and the Anglo-Saxon temperament is, perhaps, even slower than most to really grasp the essentials of the thing that is new. What is required is that there should be some close and personal association, in order that the lesson to be conveyed may be brought right home to the door of the individual. And in the present case it does seem it can be achieved in great measure by the institution of such a fund as Lady Loraine proposes.

Has such a fund any prospect of success? To some extent Lady Loraine answers this question, which seems

to have been present in her mind, when she expresses the hope that her appeal may arouse that spirit of patriotism which is latent in every subject of the Crown. As she herself says, they have but to be reminded that their forefathers gave a ship or raised a regiment at the time of their country's need. And surely the need of the self-sacrificing spirit of patriotism which impelled our fathers to the deeds that made the Empire is no less than ever it was. Indeed, it is probably greater now than at any period of our history. The whole aspect of things has changed, but the need has not changed with the conditions. War costs more than it did in the days when the theft of a bucket from a well in Modena plunged practically the whole of Europe into war, and, therefore, nations are not so ready to fly at each other's throats when both are strong enough to make the issue doubtful. There lies the whole crux of the matter—to be weak is to invite attack; and can there be the least doubt but that if Britain allowed her defences to fall into such a state that the balance of probability of victory lay against her that the attack would come practically to-morrow? We rely upon our Fleet almost absolutely, and so common is the knowledge that our very existence depends upon sea-power that the maxim of a preponderating Navy is accepted by even the most unthinking. It is simply that we have been educated up to that theory for centuries and that we, individually and as a nation, have learnt and understand the lesson. A question which we have to ask ourselves very seriously is whether the whole incidence of our national defence may not in the quite near future shift from the sea to the air. In the light of present knowledge, we are bound to admit that it does not seem altogether likely that this will happen. Aircraft will probably be auxiliary to other arms of defence and offence, but even here it is impossible to prophesy with any sense of faith in the accuracy of the deductions. But this much may be taken as absolutely certain, that aircraft will assume such importance in future wars that the Powers possessing the most efficient aerial service will start with an enormous handicap in its favour. Now, if it is necessary that we should be pre-eminent at sea, it is surely as necessary that we should be equally strong in the air, and, collaterally, that brings us back to the proposition that it is up to us both as a nation and as individuals to make the sacrifices necessary to that end. Therefore, we have not the slightest hesitation in commending Lady Loraine's idea of an Empire Fund to the most earnest consideration of the nation, and we trust that no time will be lost in giving practical effect to the suggestion. As a matter of fact, the Aerial League has done a fair amount of the spade-work in this direction already. The Lord Mayor, according to a letter published in the Press from Major-Gen. Arbuthnot, has promised his fullest co-operation, and the League's proposal to enlist the aid of the borough and county councils has been well received by Lord Cheylesmore, chairman of the L.C.C., and by Lord Derby, president of the Association of Municipal Corporations. Apparently all that has to be done now is to make the first public appeal for money, and then to continue the campaign along the set lines. Possibly this may be a chance for the League to at last justify its existence.

Presenting the Aviators' Colours.

ADVANTAGE was taken by President Fallieres of the opportunity of the annual review of the Paris Garrison, on July 14th, to present the colours, recently given by the Stella Club, to the aeronautic regiment. The colours were handed over to Col. Voyer, a picturesque

touch being given to the ceremony by the release of about 1,000 Army carrier pigeons. It is estimated that 300,000 people saw the review on Sunday, and the appearance of four airships and an aeroplane over the parade ground was the signal for outbursts of cheering.

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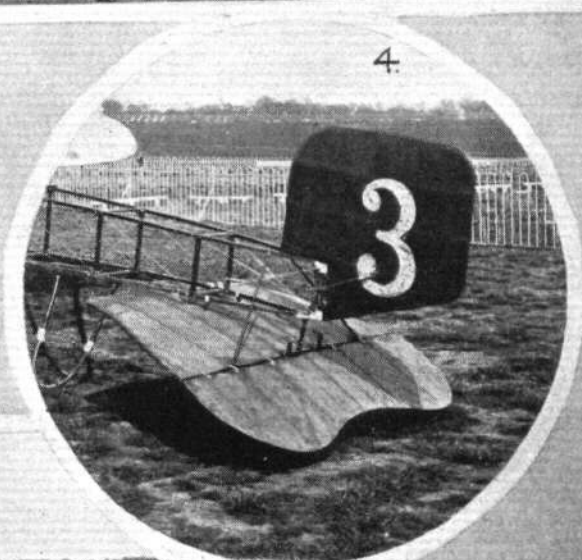
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BLERIOT
• TWO-SEATER •
TYPE XI 2 (TANDEM) .

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THE MILITARY COMPETITION MACHINES.
1. One of the actual Blériots that will take part in the trials. 2. Three-quarter rear view of Hamel's 70-h.p. 2-seater Blériot, an almost identical machine. 3. Detailed view of the chassis and front section of the machine. 4. The tail. 5. The machine as seen from in front.

THE MILITARY COMPETITION— THE MACHINES.

THE BLÉRIOT TYPE XI 2. (SEATS IN TANDEM).

ONE of the Blériot monoplanes entered for the military competitions at Salisbury we described last week; the other, which we now describe, bears a closer resemblance to the type XI single-seater monoplane, excepting that it is of increased dimensions, of greater engine power, and that provision is made for the accommodation of a passenger some three feet or so behind the pilot. Its tail, too, is slightly different, for in plan form it is roughly triangular, but with a clipped apex. A further innovation is the new form of tail skid that is employed: instead of the rattan cane skid that has characterised previous models, this particular machine, as will be seen from our photograph, employs a long bent skid of silver spruce. On the older machines the skid was fitted immediately under the tail; on this machine it is mounted just to the rear of the passenger's seat, in which position it has a much greater dragging action, and is effective in bringing the monoplane quickly to a standstill after landing.

The landing gear has also undergone slight modification to strengthen it and to provide an extra support for the motor, which, on this machine, protrudes further forwards. To effect this, two extra struts are added in front of the chassis. A further improvement is that, by a simple form of locking lever, the shock absorbers may be detached from the collar that slides up and down the main chassis tube, so allowing the machine to be lowered, as it were, on

to its knees to facilitate the fixing of the wings, attending to the motor, and to reduce as much as possible its overall height for transportation. Beyond recalling that the wings are built up of two ash booms united by pine ribs, and stating that they span 31 ft. 8 in., it would be redundant to describe them further, for they possess the same characteristics as those of previous models. They are, of course, warped for balancing.

Under a protecting cowl in front, is fitted the 7-cylinder Gnome motor, type Gamma, rated at 70-h.p. The control is essentially the same as on the other Blériot entered for the trials.

One of this machine's many advantages, from a military point of view, is the ease with which it may be packed away in what is, relatively, quite a small space. The inside dimensions of the case that can contain the machine when dismantled are:—Length, 24 ft. 8 in.; width, 5 ft. 7 in.; height, 7 ft. 6 in. From one of these cases it can be unpacked and assembled ready for flight by four mechanics in 25 minutes.

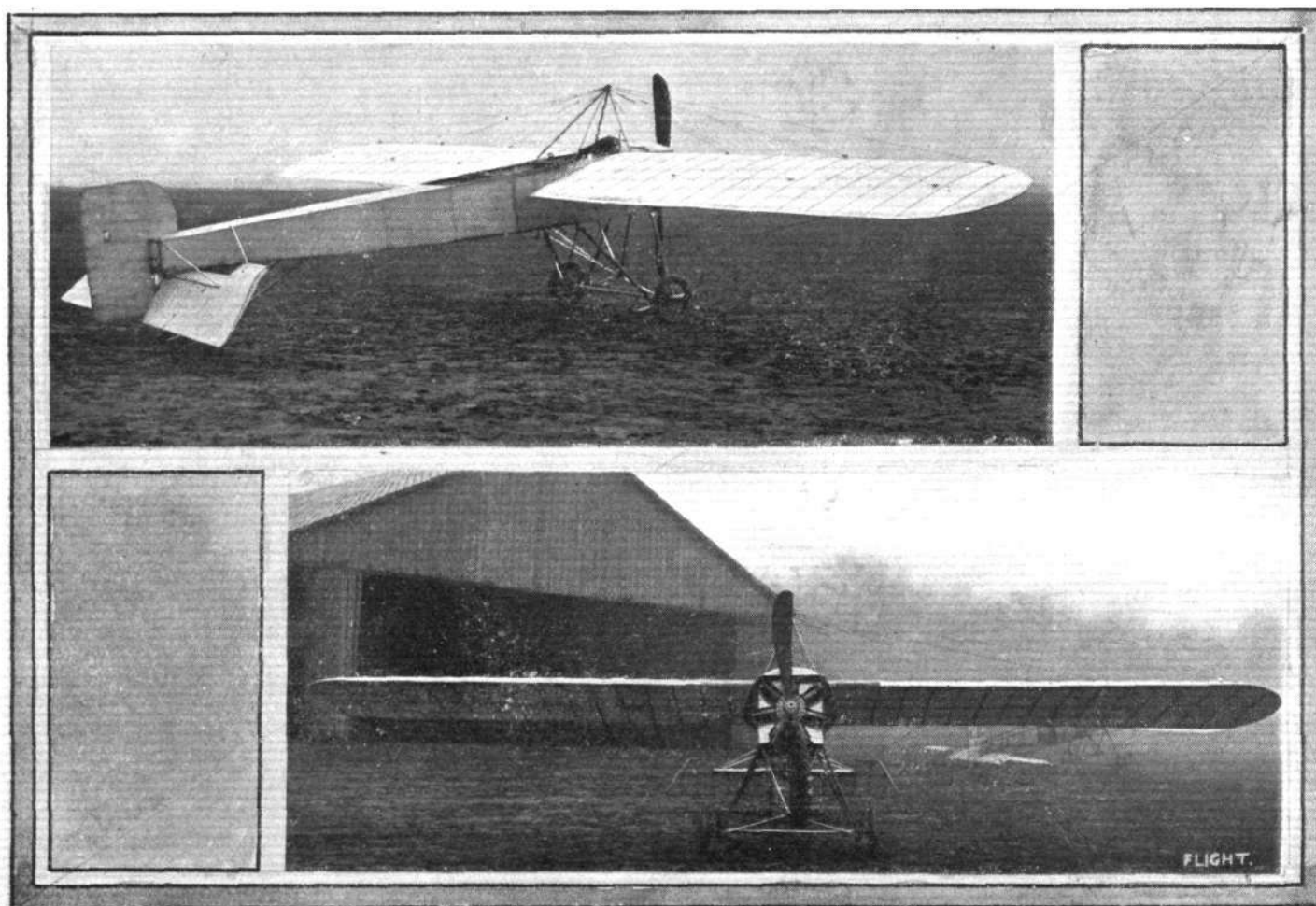
Main Characteristics.—Motor, 7-cylinder Gnome, 70-h.p., rotary; overall length, 27 ft. 4 in.; span, 31 ft. 8 in.; overall height, 8 ft. 3 in.; supporting surface, 198 sq. ft.; weight, empty, 704 lbs.; useful load, 500 lbs.; speed without passenger, 70 miles an hour; speed with a passenger, 60 miles an hour.

THE BOREL MONOPLANE.

WE are able to publish this week two photographs of the aeroplane that the Société Anonyme des Aeroplanes Borel are entering for the War Office Competitions. The pilot Chambenoit has been engaged to fly it at Salisbury.

In the machine, except that it is slightly larger all round in order to account for the extra weight of and accommodation for the passenger, there is little evidence of difference from the single-seater model which, with that master pilot Vedrines at the lever, carried

everything before it in the events of 1911. That machine was undoubtedly a very good one, being designed by M. Saulnier. It was then called the Morane monoplane. Some time later its style was changed to the Morane-Borel monoplane. Another period, and a split occurred in the firm, Léon Morane and M. Saulnier branching off, forming their own company and creating the Morane-Saulnier monoplanes. So the name of the monoplane changed again—now it is the Borel monoplane.



THE MILITARY COMPETITION MACHINES.
THE 80-H.P. GNOME-BOREL MONOPLANE.—Three-quarter view and front view.

But throughout all these changes of *administration* the design of the machine remained practically unaltered, and so it remains to-day. To the more or less casual observer, about the only point at which this two-seater Borel differs, except as regards size and passenger accommodation, from Vedrines' machine in the Circuit of Britain, is in the design of the tail. On this present monoplane, the elevators are formed by balanced flaps hinged to the rear edge of the stabilizer. But even this is not a totally original point. It has been standard practice with the Borel monoplane for the past few months. In its general outline the monoplane follows the design of the Blériot to a very great extent. Its only fundamental points of difference from that monoplane are that its landing gear is of the wheel and skid type, its wings have no dihedral angle, and that they are reversed in shape to the Blériot. By this latter statement we

mean that the Borel wings possess the same characteristic rounded tips as the Blériot, but they fly with the bigger curve leading. In flight, the wings are somewhat analogous to a Chauviere propeller-blade, and score on two points—this form of tip reduces to a great extent "end losses," and a very powerful correcting warp is obtained. The present monoplane is equipped with one of the new 12 litre 80-h.p. Gnome engines, protruding from the front of the *fuselage* without any bearing between crank-case and propeller. The seats are arranged in tandem.

Main characteristics:—

Motor...	7-cyl. 80-h.p. Gnome; rotary	Overall length ...	23 ft.
		Area ...	165 sq. ft. approx.
Span ...	34 ft.	Speed ...	70 m.p.h.

THE LOHNER ARROW-PLANE DREADNOUGHT (ARMY TYPE).

THIS interesting entrant from Germany is termed "Arrow-plane" from the fact that, when flying overhead, its silhouette resembles closely the form of an arrow. Its wings, set back Dunne fashion, might be the arrow's head, its *fuselage* the shaft.

Of the machine, two main types are made at the Vienna works of Messrs. Jacob Lohner and Co.—an "Army type" and a "Navy type." They may readily be distinguished from one another, in that the Army type has a direct coupled tractor; the tractor of the Navy type is centred some distance above the motor, and withal, geared down.

It is a biplane of the former type that will be flown in the Military Competition at Salisbury. To Lieut. von Blaschke will be entrusted the piloting. Besides the photographs we print, we have been able to glean from Mr. Cecil E. Kny, who represents the manufacturers here in England, a few details.

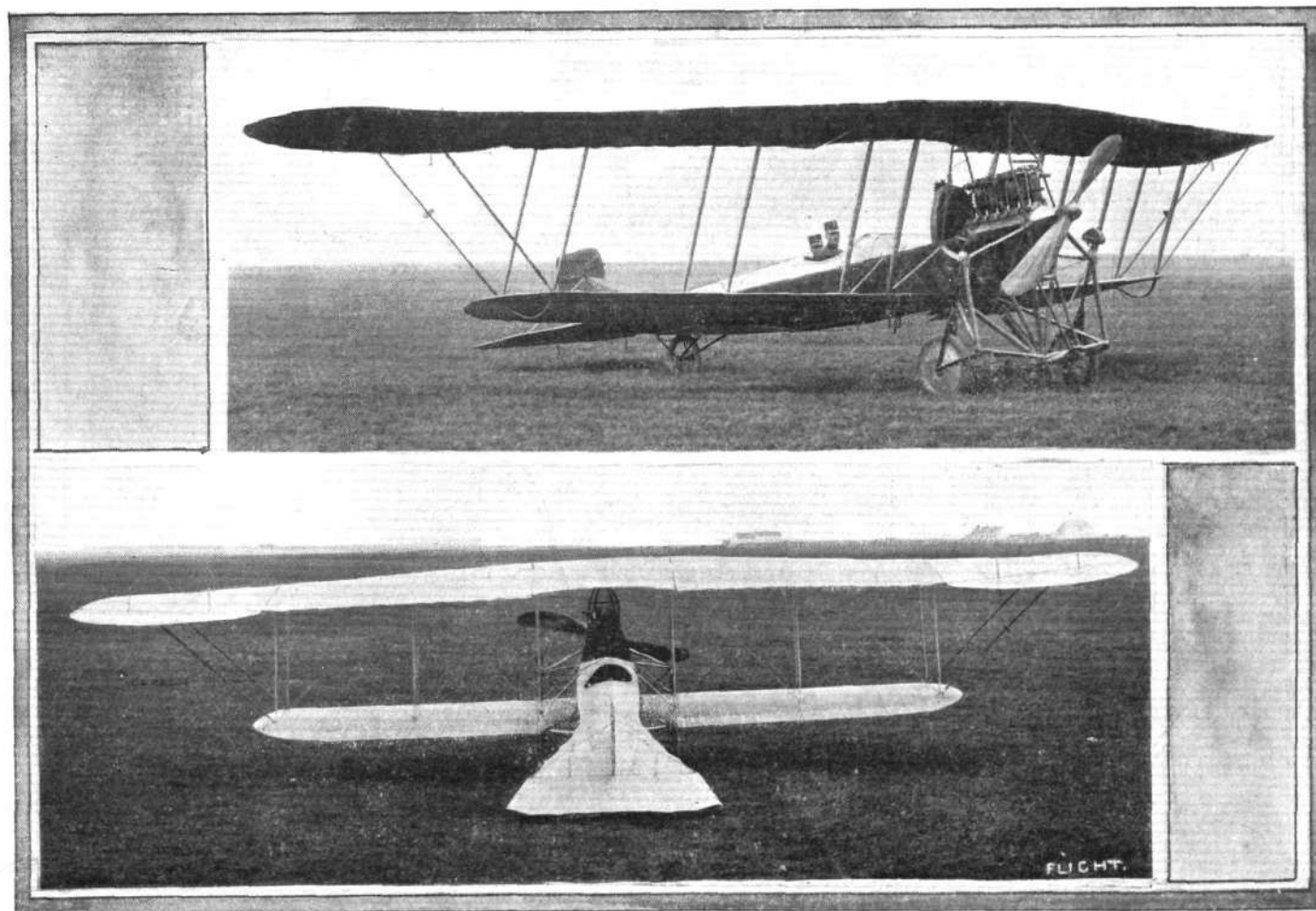
The upper plane spans nearly 53 ft., and by virtue of its shape is designed to give the machine an excellent modicum of stability—both in a lateral and longitudinal sense. Its large span, however, does not make it too unwieldy for military service, for the extensions of the top plane, each 10 ft. in length, may be folded down,

allowing the biplane to be conveniently housed in a shed just over 33 ft. wide. An entirely covered-in streamline *fuselage* forms the backbone of the machine. In it are located the three that the machine is designed to carry—the mechanic directly behind the motor (a 120-h.p. Austro-Daimler), and the pilot and observer-passenger some distance behind the planes, where their view is clearest. The fuel tanks are arranged between. Terminating the *fuselage* is the tail, the shape and general arrangement of which can be gathered from our photographs. Like the greater part of German machines, it is provided with a land brake at the tail to decelerate it quickly on landing.

In addition to its abilities for climbing—the machine holds world's records in passenger altitude, as we recalled last week—it has a very excellent gliding angle. For a biplane its speed is unusually high. It is estimated to average 70 m.p.h.

Main characteristics:—

Motor...	120-h.p. Austro-Daimler	Weight, empty ...	1,540 lbs.
Span ...	53 ft., nearly	Useful load ...	600 lbs.
Overall length ...	31 ft.	Speed ...	70 m.p.h.



THE MILITARY COMPETITION MACHINES.—

Three-quarter front and rear views of the Arrow-plane Dreadnought, the biplane entered by Messrs. Jacob Lohner and Co., of Vienna. It is rumoured that great things may be expected of this machine.

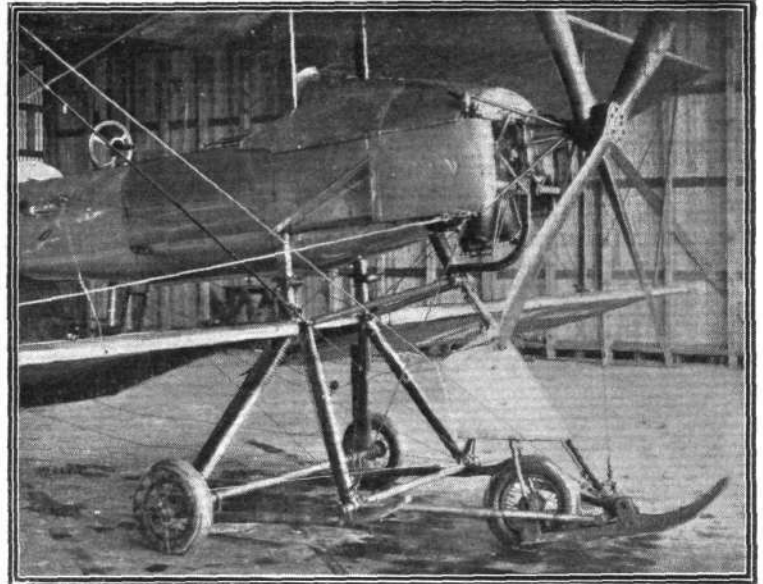
THE BREGUET BIPLANE.

THOSE who attended the flying at the London Aerodrome on Saturday last were treated to a splendid display by Moineau on a machine that is relatively an uncommon one in England—a Breguet. This particular biplane is furnished with a 14-cylinder 100-h.p. Gnome, and drives two two-bladed propellers—virtually a four-bladed one—through pinion reducing gear. As it is the machine that will probably represent the Breguet firm in the forthcoming military trials a brief description will not be amiss.

The photographs we publish give some idea of its appearance; the frontispiece this week shows the machine flying with Moineau as its pilot.

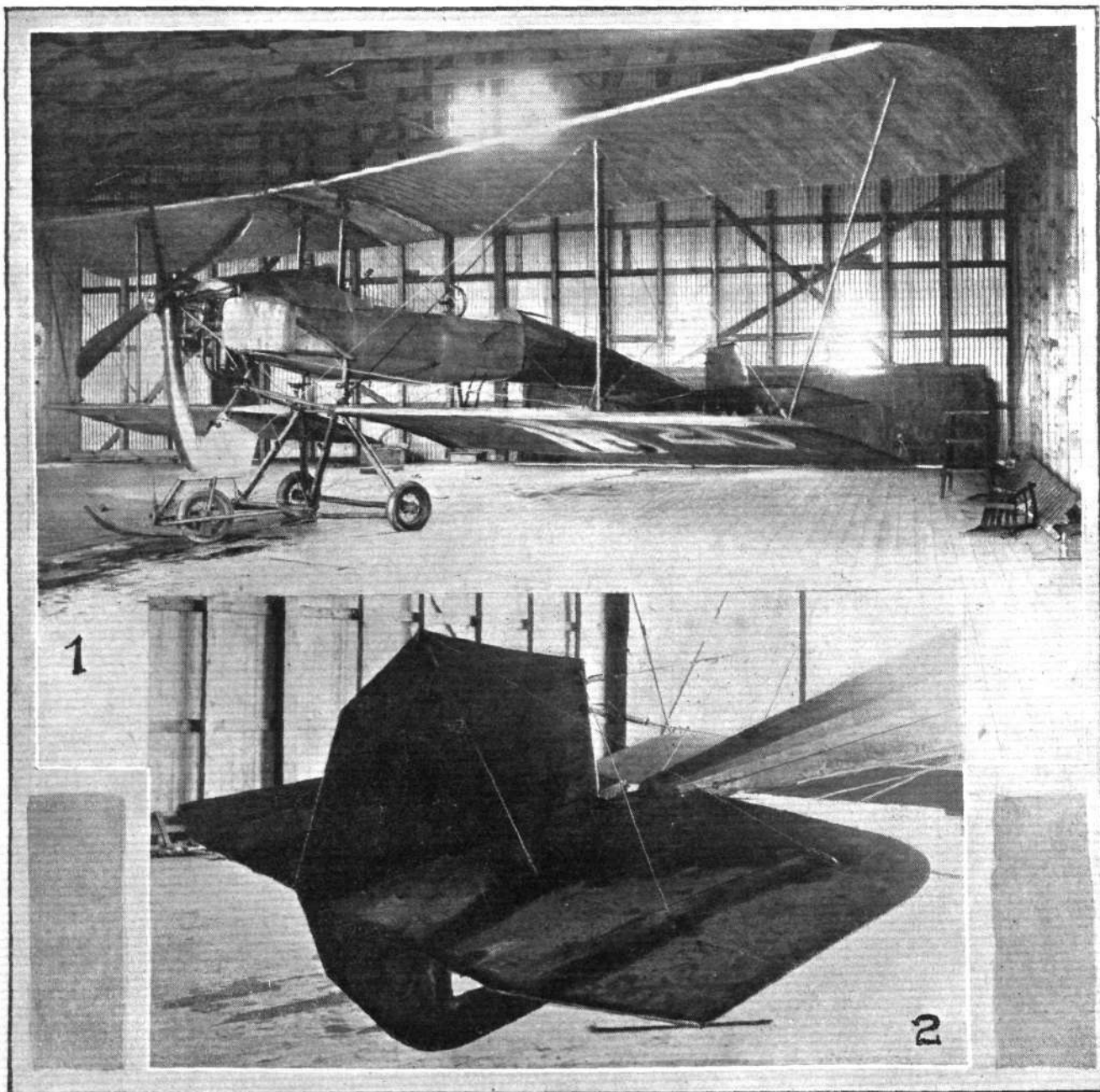
In its design, the greatest ingenuity has been displayed in establishing a machine that will be to a great extent automatically stable, easy to control and transport from place to place, speedy and strong, that will lift much weight, and that will afford the pilot a large degree of safety. All these *desiderata*, and many more that, perhaps, are not so important as the above, M. Louis Breguet has provided for in the biplane that bears his name.

In the first place, it is a tractor biplane, and for that the pilot may reassure himself with the thought that a lot has to "go" before any of the effects of an assumed smash reach him, that is, if he is suitably strapped to his seat. Again, this system of construction lends itself extremely well to facility of dismantling. A most noticeable point about the cam planes is the small number of vertical struts employed in bracing them. Only four very stout ones are used, and they are arranged in a single rack. In this present machine two extra struts are used to support the top plane extensions. The planes themselves are built about a single tubular spar of steel disposed at the average centre of pressure of the surface—about one-third of the chord from



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THE MILITARY COMPETITION MACHINES.
The front part of the 100-h.p. Breguet biplane, showing the engine mounting, the reduction-gear to the 4-bladed propeller, and the landing chassis.



THE MILITARY COMPETITION MACHINES.

"Flight" Copyright.

1. The 100-h.p. Breguet biplane that Moineau will probably fly at Salisbury next month. 2. Detailed view of cruciform tail.

the leading edge. By the Breguet system of fastening the ribs to the spars a very supple supporting surface is formed—a feature which accounts for the remarkable steadiness of the machine in flight and for the ease with which it may be handled in a strong wind. Being so enormously strong, the steel framework needs but little wire bracing, and what there is is calculated to withstand ten times the strain it is likely to be called upon to bear. The body is of torpedo form, constructed of steel tubing, steel girders and ash, the whole covered in by fabric to reduce head resistance to the lowest possible degree.

Here we might mention that wood plays very little part in the construction. It only appears to a very limited extent in the wing and tail skeletons, in the body, and in the landing gear. This latter is formed of three wheels—each protected by a skid. The two main wheels support the body of the machine through oleo pneumatic springs of special design, and they are disposed as

near as possible under the centre of gravity. The forward wheel, spring suspended, is rotatable in conjunction with the rudder, so that when the propeller thrust pulls it into contact with the ground, it may be used for steering on the ground, as one would a motor car.

All three dimensions of control are centred on one column, surmounted by a vertical hand wheel. Rocking it to and fro controls the elevation, from side to side the warping and rotating the hand-wheel governs the rudder. Into all control wires steel coil springs are introduced, to make movements less harsh in action.

The tail is an enormous cruciform organ mounted to the rear point of the fuselage by a massive universal joint.

An idea of the ease with which a Breguet may be got ready for flight is conveyed by the fact that some time since at the La Brayelle aerodrome a machine was completely folded in five minutes and rendered ready for flight in another eight.

✱ ✱ ✱ ✱ AIR EDDIES.

ONE of our photographs this week illustrates well the curious accident that overtook Lewis Turner when flying the Grahame-White School Howard Wright biplane over to "Hylands" some three weeks ago. It was misty, and he had to descend near Harlow. Starting again, he rose above the trees, but was blown down below their tops. He could have landed on a limited space between them, when some people crossed in front of him. In avoiding them he struck the trees about 30 ft. from the ground. He was thrown forward, but managed to clutch an armful of small branches, and so saved himself from falling to the ground. The machine fell—but with little damage. He merely climbed down, little the worse for it all.

Who will say that the Shop Act may not indirectly benefit aviation?

It certainly should as regards Hendon at any rate, for the Grahame-White Aviation Co., Ltd., have hit on the excellent idea of providing entertainment in the form of exhibition flights at the London Aerodrome every Thursday afternoon, for those members of the community that, by law, have their half-holiday on that afternoon.

The first of these exhibitions took place on Thursday last, and was a great success. The prices of admission on these occasions have been fixed at an even more popular figure than the Saturday meetings. Anyone in London has now the opportunity of seeing some of the finest displays of flying going, and it needn't cost him, apart from tram fares and the like, more than a shilling. For this sum he can lounge at his ease in the best enclosure. The others he can obtain admittance to for sixpence.

We have received quite a few letters bemoaning the fact that some of the best pilots at Hendon have moved off to the provinces and round the coast, exhibition flying. I do not think they need be alarmed, for the authorities there are determined at all costs to maintain the high standard of flying. Both Valentine and Moorhouse will be coming back to Hendon before long, and, of course, those pilots who have gone away exhibition flying will not be absent for ever and evermore. They will, I am assured, return to put in frequent appearances.

Then again there is more than a chance of seeing most of the pilots coming over with the French machines entered for the Military competitions flying there during the next month or so.

I've heard that there is a scheme under way to bring a Parseval non-rigid airship over to London to ply for passenger service, and to be used for advertising purposes. The proposition should really have much to commend it, for although no reliable data is to hand at the moment, it is possible that there may be quite a large balance on the good side as a result of the enormous amount of passenger-carrying that the Zeppelin "Schwaben" has been doing for several months past all over Germany. Then consider the income that one of the Parsevals has derived from displaying illuminated advertisements over Berlin at night-time, apart from the revenue from passenger-trips.

Referring to the Military Aeroplane Competitions that will take place on Salisbury Plain next month,

it is interesting to learn that the Judges' Committee have decided not to hold any official flying on Bank Holiday, the 5th of the month, or on any Sunday during the competitions. This, however, will not prevent competitors flying should they care to. In fact, it may come as a welcome respite and give them an opportunity of practising and of doing any tuning up necessary.

Signor Giovanni Sabelli has joined the Hanriot Company at Brooklands as one of their pilots. Since he obtained his certificate, he has been using a little low-powered Anzani-Deperdussin and with it has done a lot of very fine flying. It is generally acknowledged that he has the making of an exceptionally fine flyer, if he only had the opportunity of showing his skill on a more powerful machine. He looks like getting his opportunity now.

The proposal of the Dayton Wright Memorial Commission, a body composed of forty Dayton citizens, to erect, in Wilbur Wright's memory, a pair of Greek columns on the spot where his first successful flights were made, is a particularly good and clever one. It has been thought, and rightly so, that such a memorial, in its simplicity, would be suggestive of the retiring modesty that was such a feature of Wilbur's personality. It is intended, if possible, to obtain the two columns from some ruins near Athens, and to erect them at "Simms Station," on Huffman Prairie.

The British Deperdussin works at Highgate have got on hand at the moment about as much work as they can comfortably tackle. At the present time there are twelve monoplanes being put through the works, and operations are going on day and night in order to get them turned out in time. For the Australian Government quite a large number of single-seater machines of a racing type, fitted with Anzani engines, are being built. Another interesting machine there is the 100-h.p. Anzani-Deperdussin that will represent the British firm in the forthcoming Government trials. "OISEAU BLEU."

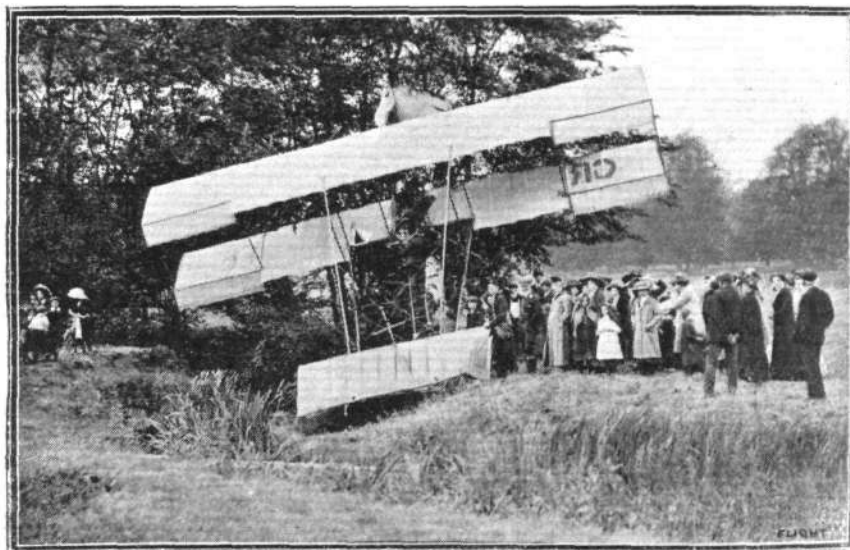


Photo by Wm. Truswell.

How Grahame-White's School Howard Wright biplane appeared after it had dashed into trees. Apart from the broken elevator, splintered propeller, two or three ribs smashed, and a damaged tail tip, no further damage was done.

FROM THE BRITISH FLYING GROUNDS.

Royal Aero Club's Eastchurch Flying Ground.

DURING the past week not a great deal of flying has been indulged in, firstly on account of local thunder disturbances, which have made the air more than unpleasant, and, secondly, the Naval officers have not returned from manoeuvres; and amongst others, Mr. Ogilvie has been dismantling his wings for periodical inspection, Mr. McClean is fitting new wings to his tractor biplane, the old ones having had rather a "wet" time at Eastbourne, Capt. Dunne's monoplane is undergoing reconstruction since it was damaged, and the biplane has gone away to show its capabilities to others outside the Isle of Sheppey. Capt. Gordon took out the Henry Farman on Wednesday, and took as passengers Messrs. Oswald Short and Fowler, the passenger accommodation on this machine is not as comfortable as it might be.

On Thursday, Capt. Gordon was again out on Henry Farman with passenger, and was obliged to make a forced descent owing to engine trouble (inlet-valves).

Friday was a blank day, and also Saturday, with exception of Commander Samson's flight on the 100-h.p. Short waterplane from Portsmouth to Harwich, which he accomplished with one stop at Dover, a distance of some 220 miles.

Sunday, the atmosphere although apparently quite calm, was most erratic, and proved to be too much to make flying enjoyable.

Brooklands Aerodrome.

ON Saturday afternoon last, the B.A.R.C., third aeroplane handicap for £50 drew quite a good field. Seven machines were lined up at the post at 5.30. The first away was Mr. Spencer upon his biplane, who was quickly followed by Mr. Pashley on the Sommer biplane, and then Mr. Hotchkiss on the Bristol biplane. By the time these three were over the flour mills they were all neck and neck, after fighting with each other's backwashes instead of deviating from their course. Then came Lieut. Parke on the Caudron biplane, who lost some little time by getting up to a safe altitude. Mr. Perry next on the Burgess-Wright, who looked like business from the moment of starting. M. Verrier then away on the Maurice Farman, followed by Mr. Bell on the Martin-Handasyde monoplane. M. Verrier was quickly overhauled by Mr. Bell through the former lifting steeply to a safe altitude, the latter going off just clearing the telegraph poles. The first machines to reach the turning point at Chertsey were the three first biplanes, Mr. Spencer leading. Mr. Hotchkiss was seen in difficulties through his machine not lifting properly, and he had to go round to the right and then left to get round the turning point, leaving very little margin from the big oak tree. Mr. Perry came next, cutting the point very fine, and losing not a second more than possible. Lieut. Parke next, flying high for this course, and Mr. Bell passing him as soon as the point was turned. M. Verrier was flying at about 600 feet, and went a considerable way wrong, but came back into the course showing a good turn of speed. When the three first biplanes got back to Brooklands after the first lap Mr. Hotchkiss was leading, but through a failing engine he was seen to have trouble all the way, and showed judgment in stopping. Mr. Spencer came down very low when turning the pylons, but Mr. Pashley was going very strong. Mr. Perry was now seen to be overhauling the two leading biplanes very

quickly, and Mr. Bell, who undoubtedly would have passed everything, had to land through a water connection coming disconnected. Lieut. Parke was keeping an excellent course, and he and M. Verrier made the first circuit practically together, the latter having covered many miles farther than was necessary. By this time the leading machine was seen coming back a long way ahead, and Mr. Perry is to be congratulated upon the way he made up the distance after the first circuit. He won by a long way, and entirely got his lead by keeping such an excellent course. Mr. Spencer and Mr. Pashley came along neck and neck, the former claiming second place by about a second, then came the M. Farman which again had flown a very wide course, quickly followed by Lieut. Parke. Considering the bumpy state of the weather the spectators were treated to some very good flying, and before and after the race most of the machines gave exhibitions of their abilities. Mr. Spencer was first out in the afternoon, followed by Mr. Pashley, who were both seeing what their machines could do. M. Verrier went out on his Farman, and shut off his engine over the crowded paddock, and glided down to within a few feet off the ground, when he started up, and gave two such jumps and dives that many people who knew little about flying held their breath in expectation of serious smash, but anyone knowing the abilities of pilot and machine only smiled and enjoyed the spectacle. After the race, Mr. Bell took up the Martin-Handasyde, and gave an exhibition of flying that is seldom seen. He undoubtedly had the Martin-Handasyde well in hand; and now they have got the engine to run more like its normal form, the machine is being put through its paces, which remind one of its fine flying abilities of many months ago. In the evening the Bristols were as busy as they always are carrying passengers, most of them being pupils, all over the aerodrome.

On Sunday the first out was Lieut. Parke, at 5 p.m., on the Caudron biplane, who flew a spectacular flight at about 300 ft. in front of quite a large crowd of spectators. A murmur of admiration could be heard, especially from the lady spectators, who possibly admired the colour of the Caudron equally as much as Lieut. Parke's excellent handling. Then out came the indefatigable Bristol school machine with Mr. Hotchkiss on board looking very business-like in flannels and shirt sleeves, flying a couple or three circuits close to the public enclosure. Mr. Spencer out next, flying round, giving a good exhibition. Then came Mr. Gordon Bell putting the Martin-Handasyde through her paces, showing a fine turn of speed, greatly pleasing the enclosure with his marked ease of handling. Mr. Perry, who has been putting up such a really good show since he has been flying Mr. Sopwith's machines, came out on the Burgess-Wright, and follows in his principal's footsteps very much when he wants to make a turn by wasting no time and space but just piles on the bank and round they go. By this time the machines were lined up for the speed contest (handicap) round the sticks for two laps to the heat and four to the final. Three machines were in the first heat. The Caudron was away first with Lieut. Parke piloting, followed some 15 secs. later by Mr. Perry on the Burgess-Wright, and about 66 secs. by Mr. Bell on the Martin-Handasyde. The Burgess-Wright soon caught the Caudron and finished in that rotation, the Martin-Handasyde,



THE THIRD AEROPLANE HANDICAP AT BROOKLANDS, SATURDAY LAST.—Capt. H. Wood on his Vickers monoplane and P. Verrier on his Maurice Farman biplane getting away from the start.

although much the fastest machine out, had too great an obstacle in its handicap to get over. The second heat saw the two old biplanes chasing each other. Mr. Spencer was away first, receiving 54 secs. from Mr. Hotchkiss. The latter carried a passenger and failed to reduce the lead by more than a very few seconds. The passenger, Mr. Hudson, however, enjoyed the fun as much as if he had been carried upon the winning machine, and did his best to get down behind the pilot to reduce head-resistance as much as possible. In the final, Mr. Spencer started off first, followed by Lieut. Parke 3 mins. later, who was followed by Mr. Perry in 30 secs. later. The Burgess had it all its own way, and simply revelled, piling up the bank, and cutting the pylons as if it had only sixpennyworth of space to turn in. It proved an easy winner, with Lieut. Parke second. Unfortunately at the pylon Mr. Spencer got into the Burgess-Wright's backwash, and was brought down, damaging one wing tip, which put him out of the race, and had to succumb to a funeral-like procession, and taxi slowly home. It was bad luck for Mr. Spencer, who had flown a good race, taking advantage of every opportunity available.

As soon as this was over, Mr. Merriam went off on the Bristol with a passenger up behind, and after landing, straightway went off with another passenger. Mr. Bell again brought out the Martin-Handasyde, and started stunts round the sheds and enclosure, greatly to the enjoyment of the public, who appreciated his fine flying, though just a little dangerous. Mr. Sopwith brought out the school Farman, which had been thoroughly repaired, and flew a circuit or two. Mr. Hotchkiss went off with Mr. Thorburn, skirting Weybridge and round over Chertsey, making a long half-spiral and landing in front of the enclosure. Mr. Perry was seen flying in the Burgess-Wright again, this time carrying a lady passenger, and by the way she was laughing and waving to her friends below as they passed over the enclosure seemed to find the joy-ride full of pleasure, and was possibly envied by many for being in such cool air after stewing on mother earth through such a terribly hot day. Another week-end passing, and Brooklands, with its many jovial "pilot aviateurs," who seem to be indefatigable in spite of the heat wave, provided as good and perhaps a little better flying show than can be seen anywhere else, and certainly are being rewarded a little by the increasing popularity of the once most famous week-end rendezvous.

Brooklands seems to be once more coming back to its old self, and in spite of a chokingly hot week-end the enclosure on both evenings seemed bristling with life and joviality, the old kind of joviality that Brooklands was once so noted for.

Deperdussin School.—Monday morning last week Capt. Dawes out on *brevet* machine, doing some very good straights for a half hour. In evening Lieut. Gill doing a few circuits in excellent style. Next day, in morning Lieut. J. C. Porte on two-seater,



Mr. Grahame-White in the seat of his new Henry Farman biplane, with Mr. Gates, the popular aerodrome manager, as his passenger.



"Flight" Copyright.

Baroness Schenk, one of the lady aviators who are practising at Hendon Aerodrome.

flying for 40 minutes in fine style and terminating with a splendid *vol plané*. Wednesday, no flying in the morning. Later Lieut. J. C. Porte doing a few circuits on two-seater at a good height and flying beautifully. Lieut. Gill out Thursday on *brevet* machine for 15 minutes, coming down in a fine *vol plané*. Friday, no flying. Saturday, Lieut. Gill out in morning, making few circuits at a good height.

Vickers School.—MacDonald on Thursday last week was doing wide circuits over surrounding country on No. 5, in the evening. Capt. Darbyshire was out for 25 mins. on the same machine doing well. Next day MacDonald was out early testing No. 5 machine with a new propeller, and on Saturday on No. 6 machine was making cross-country circuits about 800 ft. up. Capt. Wood and Capt. Beatty were both out on No. 5 machine, Capt. Beatty, Capt. Darbyshire and Knight were all out on No. 3 machine. In the evening MacDonald was on No. 6 again putting in a lot of circuits over the surrounding country.

Capt. Beatty on Sunday did some straight lines to test No. 3 before handing her over to Capt. Darbyshire, who was out for 40 mins. doing very well. MacDonald was on No. 6 doing many circuits with Capt. Beatty as a passenger in the evening.

Monday MacDonald on No. 6 got up to 1,000 ft. and then took several passengers for trips, and Tuesday he was on No. 6 with Capt. Beatty as passenger, and finding the conditions good started off to Farnborough, where they landed after a most enjoyable flight.

Eastbourne Aerodrome.

OWING to most of the pupils being away, very little school work has been done during last week. Lerwell put in some good practice on Friday and Saturday evenings. On Monday Fowler was out for a short time on the two-seater Blériot with Gassler as passenger. Lieut. Murray, a new pupil, joined the school on Tuesday and had his first lesson. The new Bristol biplane which has been ordered by the Company is due for delivery in about a fortnight, when Mr. J. J. Hammond will join the school to take over the post of head pilot-instructor. Mr. Hammond has had considerable experience with Bristol machines, having been with that Company for about twelve months, during which time he acted as instructor at their Lark Hill Ground and also took out one of their machines to Australia for demonstration purposes. Commander Samson was sighted on Saturday morning on his way to Dover. The first fatality occurred at the aerodrome last week when two bullocks succumbed to lead poisoning, caused through eating part of a canvas boat which had been left lying about. One of the local papers had on their bills the next morning "Fatality at the Aerodrome." Beautiful weather has prevailed all the week.

Farnborough.

SATURDAY morning last weather very dull, Capt. Burke out on BE 1 flying well carrying passengers. Later Lieut. Mackworth out on BE 1 flying well. Capt. Raleigh and Lieut. Longcroft, out on Breguet, had mishap in landing, breaking wing tip, thus stopping flying for week-end. Airship Beta out doing circuits at a good height making good speed against a choppy wind.

Monday morning very misty until about 5.30, Capt. Burke out on BE 1 flying round Cove and Fleet carrying passengers. Later Lieut. Mackworth out on BE 1 carrying passenger. Mr. De Havilland doing circuits on hydroplane from Fleet Pond, carrying passenger, then out on BE 2 flying very high. Lieut. Reynolds on F 5 giving instruction to air mechanics, Green and Ward. Airships Gamma and Beta, both out at same time flying well.

Filey School (Blackburn Aeroplane Co.).

BRERETON has been for some time away from Filey giving exhibition flights. Last week he was at Bridlington, and is remaining until Tuesday next when he leaves for Skegness. He has given several flights in Bridlington Bay although the weather has been somewhat bad for flying.

London Aerodrome, Collindale Avenue, Hendon.

Grahame-White School.—Tuesday last week started with a foggy morning. Mr. Lewis Turner out at 2.55 doing a test circuit on No. 7, and Capt. Salmond followed with circuits on same machine. Then fog thickened, and no further work till 5.20, when Mr. Turner took out the Howard Wright for a test. Finding conditions favourable, he advised Mr. Kershaw to go for his *brevet*, which he did. His second flight was surprising; the observers signalled to him after his first circuit that he had got his height, but he misread the signal, and the more they waved the higher he climbed, finishing at 600 ft.

A bright evening ended with a puffy wind, but school in full swing. At 7.30 Lieut. Rathbone doing straights on school "bus" (No. 7), with Mr. Noel in passenger seat, and Mr. Lewis Turner out on the Howard Wright for a test flight. Then Mr. Cholmondeley on No. 7 with Mr. Noel and Mr. Turner up with a passenger. This, followed by Captain Nicholas doing solo straights on No. 7, and Mr. Turner taking a new pupil, Lieut. D. Allen, on the Howard Wright. The latter had rather an exciting introduction to the joys of flying, as Mr. Turner had to make a landing in the rough to avoid another machine, and the chassis of the Howard Wright collapsed. Pilot and passenger got off without even a shaking.

Mr. Noel now sat as guardian angel to watch Capt. Salmond's control, and afterwards sent the latter for solo straights, which he did very well. After this Mr. Hoelscher and Lieut. Allen were out,

also on No. 7, while Mr. Roupell was practising rolling on the 25 Blériot.

Wednesday morning was a chapter of those minor accidents which do so much towards making the aviator what he undoubtedly is—a monument of patience and a master of abuse.

Lieut. Rathbone out with Mr. Travers at 4.2 a.m. and a tyre promptly burst. This repaired by 5 a.m. and Mr. Travers made a test to see if wind too strong. Finding it all right, Lieut. Rathbone again pilots, with Mr. Travers in passenger seat, and on returning find two tyres flat, and a control wire frayed. This repaired by 6.30 a.m., and Capt. Salmond out for solo straights, and then Mr. Hoelscher with Mr. Travers. But by this time, 7.15 a.m., wind so strong that school shut down.

In the evening Mr. Noel twice went up for tests, but on each occasion found too much wind for pupils.

No work on Thursday morning; evening too windy, though all pilots in turn took machines out to test.

Another abortive morning resulted Friday; pilots out at 4.40, but in getting machine out one *aileron* caught by a hanging rope, and repairs not complete till 6.20, when Mr. Travers just had time to do "guardian angel" to Mr. Cholmondeley, after which wind rose. In evening, Mr. Wynne doing straights on No. 7, and Lieut. Rathbone enjoying passenger straights. Then an hour and a half's delay for wind, after which Mr. Noel took Baroness Schenk for a passenger flight. After this, Mr. Hoelscher, Mr. Cholmondeley and Lieut. Allen out with Mr. Noel in the passenger seat.

A busy morning on Saturday. Mr. Travers out at 4.53 with Mr. Cholmondeley. Then Capt. Salmond up for 10 mins. doing circuits of excellent quality, after which Lieut. Rathbone out with Mr. Travers, unfortunately breaking a radius-rod owing to a landing while drifting. At 6.5 Mr. Hoelscher made his first solo flight, and tried to land some 6 ft. up, but owing to special chassis construction of school machine did no more than break a wire or two. Later, at 10.15, Mr. Desoutter up on the old "Gordon-Bennett" Blériot, practising for the afternoon, and later came the regular flying meeting.

On Sunday afternoon and evening there was some very remarkable flying, in spite of a stiffish wind and a strong sun, which led to very tricky air conditions.

The ball was opened by Mr. Lewis Turner, who took out the Grahame-White school Farman, and did a very fine exhibition flight of 10 minutes or so. While he was describing the state of the air, Mr. H. J. D. Astley, just home from the R.E.P. ground at Buc, took out the old "Gordon-Bennett" Blériot, which won at Belmont Park in 1910, and which, it will be remembered, is now fitted with a 50-h.p. engine. He went off to St. Albans, and was on his way back when his engine started missing, so he came down to set it right. Meanwhile, Hamel had taken out the two-seater Blériot for a short solo flight, and then took a lady passenger for a long flight, taking her across country first, and then returning to do some really wonderful exhibition flying.

While Hamel was out of sight, Verrier brought out the Maurice Farman, and after a short test flight started passenger-carrying, a steady stream of passengers keeping him busy for some hours. At about 4.45 Mr. Travers and Mr. Noel took out the Grahame-White School Farman in turns, to show what really good pilots can do even on a slow school machine, but their performances, excellent as they were, were put in the shade by Mr. Grahame-White himself, who brought out his new 70-h.p. Henry Farman, and took Mr. Gates for a long ride in it.

About the same time, M. Moineau started in the 100-h.p. three-seater Breguet (the identical machine which passed the French Military trials), and proceeded to do some very clever trick flying. To add further to the variety of machines, S. Nardini now brought out his 50-h.p. Deperdussin (the machine, be it noted, which Mr. Valentine flew in the two great circuits of last year), and did some very pretty flying on it. About this time, the Maurice Farman had its first mishap since it has been here; a wire in the chassis came adrift on landing, breaking the propeller and one strut. On the new Henry Farman Mr. Noel spent the evening in steady passenger carrying, the passengers being more than delighted at the behaviour of this magnificent machine. In the middle of this, Mr. Astley returned, having got his engine going again, and after this the visitors began to fade away, weary and stiff-necked from watching eight different machines flying for four hours.

Aircraft Co. School—On Friday last week, Verrier flew to Brooklands at 5.30 p.m., carrying Greswell as passenger, arriving there at 6.0 p.m.

Next day Verrier competed in cross-country handicap of 12 miles, but was beaten by other machines with a high handicap. He left Brooklands for Hendon at 6.15, arriving at the latter at 7.0 p.m., carrying Greswell as passenger, in a wind of 30 m.p.h. dead against him.

On Sunday he carried ten passengers in the evening.



M. Moineau, the clever pilot who is flying the new Breguet warplane.

Blériot School.—Monday, last week, no pupils able to practice at any time during the day owing to wind and occasional rain.

Although several of the pupils were on the ground at 4 a.m. next day, the then prevailing mist did not disappear until 5 o'clock, when Messrs. Hall, Sacchi, Aubert, Gaudillon, Teulade, and Clappen were all able to put in good work. M. Aubert was up first, and did the second half of his *brevet* test, getting up to a good altitude. Mr. Hall did a couple of circuits, and is going to try figure eights next week, whilst M. Sacchi did a brace of straights, M. Teulade one straight and then a circuit, Clappen two straights, and M. Gaudillon, who is getting on very well, two rolls on No. LB 1.

Wednesday, Messrs. Hall, Sacchi, Teulade, and Clappen were on the ground by 5 a.m., and all did good work on LB 2; Messrs. Hall and Teulade each making straights, and Messrs. Sacchi and Clappen one each. The wind then rising, and continuing for the remainder of the day, put a stop to further school work.

5.30 a.m. Saturday saw weather conditions quite good, Messrs. Sacchi, Hall, and Clappen each accounted for two straights on the LB 2 machine, and are only waiting for another fine day to attempt eights.

Deperdussin School.—Sabelli on Monday last week was out on racer and flying with his usual skill. All pupils out in evening; Brock, Harrison and Lieut. Reilly showing excellent progress and ability. Tuesday, all pupils out practising; Lieut. Reilly, Harrison and Brock, now making circular flights, Capt. "X" also progressing. Sabelli out on No. 1 machine and doing "eights." Too windy Wednesday for outdoor work.

Thursday afternoon, Brock and Harrison doing excellent straight flights, showing great progress in handling machine. Later Sabelli tried No. 1 machine and passed it to Lieut. Reilly, who did two circuits and two figure eights, and finally passed successfully half of his certificate.

Lieut. Reilly finished *brevet* flights Friday in excellent style. Capt. "X" showed great improvement in rolling practice. Brock and Harrison doing a few straight flights.

Saturday morning all pupils out practising as usual. In afternoon Sabelli made several flights, and took part in the different speed handicaps. With his miniature Deperdussin he easily overcame his different opponents and successively won a 1st, and a 2nd prize.

W. H. Ewen School.—School work on Monday last week began at 5 o'clock in the morning. Beaumann was making excellent circuits on the Deperdussin, but the engine was not pulling very well so he landed with a very nice *vol plané*. Dubois was also testing but found the engine still running badly. Two new pupils, Capt. A. K. O'Brian and Mr. Eric Conran were on the Blériot and each made several good straight lines for the first attempt.

On Tuesday, work began at 5.30 a.m. Mr. Ware did several circuits on the Blériot at a height of 10 feet, while Mr. Edmund also was making very good straight flights, and both are now ready to go on the *brevet* machine. Capt. O'Brian, Messrs. G. H. James, H. James, and Mr. Conran were making very good straight lines with the tail well up. There was no flying on Wednesday because of the wind, but on Thursday Messrs. Ware, Conran, Lawford, H. James and G. H. James were all making excellent headway with straight flights. Later Mr. Sutton was rolling but found the engine troublesome.

Friday was a busy day at the school, all the pupils being out and all making splendid progress. Later Beaumann out on the "Dep." but found the wind very tricky. Saturday morning the school began at 5.30, Messrs. G. James and Ware doing straights and half circuits on the Blériot, while G. H. James made one straight roll. Unfortunately he got into the rough ground and damaged the chassis slightly.

Salisbury Plain.

Bristol School.—Monday, last week, there was no flying in the morning. At 6 o'clock in the evening Pizey set out, with Geoffrey England as passenger, to fly to Brooklands on Biplane No. 19, reaching Brooklands without a stop. Busted was giving tuition flights to Capt. Lucina and Major Ashmore, Harrison taking Major Ashmore and Mr. Lywood twice and Mr. Featherstone once. Good work was put in on the monoplanes by Messrs. Campbell, Greig, Barnwell and Pickles.

After a trial flight, Harrison took Major Ashmore, Capt. Lucina and Mr. Lywood, Pizey being out with Capt. Lucina, Major Ashmore and Lieut. Brophy, each pupil having about 25 minutes tuition with many landings. Gordon England was out first with Capt. Lucina and then with Mr. Lywood, both of whom are getting on very well.

Pizey made a trial flight on one of the monoplanes, after which Geoffrey England made a circuit round Fargo, coming back and landing quite well. Messrs. Pickles, Barnwell, Greig, and England were also out for useful practice on monoplanes, all of these pupils landing exceptionally well. Mr. Lister did two good solos on one of the school biplanes, landing and flying very well.

Mr. Rawson Shaw successfully accomplished the necessary tests for the Royal Aero Club certificate, observed by Capt. Brooke-Popham and Mr. Smith Barry. Busted was also out for a fine flight on one of the two-seater monoplanes, the machine flying splendidly.

Work commenced early Tuesday, Pizey giving two tuition flights, to Capt. Lucina, one to Major Ashmore, and one to Mr. Lywood. Each pupil having about half-an-hour's practice, and being taken up to about 1,000 feet around the surrounding country. Harrison gave tuition flights to Major Ashmore twice, and one to Mr. Lywood, and one to Capt. Lucina, giving both pupils high flying experience, with many landings.

Mr. Lister was up for two good solos, landing well. Harrison was on the Anzani monoplane for two circuits, after which Messrs. Greig and Barnwell each made four circuits, Geoffrey England, Barnwell, Greig and Pickles also making two flights each. Altogether three hours' continuous flying was done, the machines being in the air practically all the time.

Useful work was performed on Wednesday morning, in which all the pupils and staff took part. There was no flying Wednesday evening, the weather conditions being far too bad.

No improvement by Thursday morning. The weather was certainly better in the evening, and after a trial Harrison gave tuition flights to Major Ashmore, Capt. Lucina, and Mr. Lywood, Mr. Cheeseman and Capt. Brabazon; Gordon England taking up Lieut. Brophy. Mr. Lister made a flight lasting fully half an hour, flying his machine splendidly; Messrs. Campbell, England, Barnwell, Greig and Pickles were all out for trips on the monoplanes.

Gordon England was out for a trip on a Tractor biplane, Busted also flying one of the two-seater monoplanes.

Harrison was out first Friday morning, giving two tuition flights to Major Ashmore and one each to Mr. Lywood and Capt. Lucina. Busted gave tuition flights to Capt. Brabazon and Mr. Cheeseman, also taking up a Bristol two-seater monoplane. Gordon England gave a tuition flight each to Capt. Brabazon and Mr. Cheeseman on a Tractor biplane. Pixton was out with Capt. Lucina and Mr. Lywood, Mr. Jennings getting in some rolling practice on one of the monoplanes, flights being made on this same type of machine by Messrs. Barnwell, Greig, Pickles and England. Campbell was on another of the school monoplanes, slightly damaging his machine while negotiating a landing.



"Flight" Copyright.

Mr. J. L. Travers, who is now flying so well at Hendon.

Saturday, Pixton was first out in the air giving tuition to Major Ashmore, Capt. Lucina and Mr. Lywood on biplane, he also took Mr. Cheeseman for flight on one of the school two-seater monoplanes, finishing up with a solo on the same machine. Busted was flying a two-seater monoplane, Gordon England also being on a tractor biplane. Harrison after a solo took Major Ashmore, Capt. Brabazon and Lucina, and Messrs. Lywood and Cheeseman. Mr. Smith Barry was also out for a solo, then giving a trip to Capt. Lucina.

Royal Flying Corps.—No outdoor work was done on Wednesday, as the R.F.C. was attending the funeral of Capt. Loraine.

On Thursday, Capt. Brooke-Popham made four flights on the Avro biplane, taking up passengers—including one trip of 15 mins.—over Winterbourne Stoke; and Privates McCudden and Strugnell, pupils of Lieut. Fox, made good trials at a height of 300 ft. Lieut. Fox made three flights at a good height, with passengers, on F 7 biplane. Sergt. Ridd also was out on F 7 biplane scouting around the Plain, and Capt. Carden was testing the engine of the Dunne biplane.

For his height test Lieut. Fox on Friday morning made a splendid flight on the two-seater Blériot monoplane, and then changed over to the biplane F 8, which has been overhauled with good effect. Capt. Brooke-Popham was out on F 7 biplane while the engine of the Avro was being cleaned and the machine overhauled. Sapper McCudden and Sapper Strugnell on F 7 biplane made some good solos, and Sergt. Ridd put up a good flight at a height of 800 feet. Capt. Hamilton, on the Deperdussin with Anzani engine, took off for his height test. Climbing very quickly. In the evening Lieut. Fox brought out the two-seater Blériot monoplane and took off for a cross-country flight, but owing to fog was forced to return to the hangar. Capt. Brooke-

Popham made some good flights, and Capt. Hamilton was out on his own private Deperdussin monoplane. Capt. Carden was testing the Dunne biplane fitted with a Green engine. Sergt. Ridd on F 7 biplane and Sappers McCudden and Strugnell put in some useful practice.

Early on Saturday morning Lieut. Fox was flying the two-seater Blériot monoplane in fine style, and afterwards on biplane F 8 flew to Cheltenham and back. Capt. Hamilton made a high cross-country flight on the Deperdussin monoplane and Sergt. Ridd was doing well on a biplane. In the evening Capt. Hamilton on his Deperdussin went for his superior *brevet*, over a course to Weymouth and back. Lieut. Fox was on biplane F 7, on which Sapper Strugnell also made a good flight at a height of 300 to 400 ft., doing right and left-hand turns. McCudden also followed on F 7, putting up a good flight and both these sappers will soon be ready to take their tickets. There was no outdoor work on Sunday, and on Monday morning work was confined to the hangars.

In the evening Capt. Hamilton was first out on the Deperdussin monoplane, making five good useful flights, flying very high and signalling with a syren. In one trip he went up to a height of 2,000 ft., and in another took up a passenger. Sapper Strugnell made two useful flights on biplane F 7, as also did McCudden, who afterwards qualified for his *brevet*, finishing in good style. Sergt. Ridd then took over F 7, and went scouting around the Plain, made five flights, taking up passengers. Capt. Broke Smith arrived from Upavon with Capt. Gerrard as passenger on a Short-Wright biplane, and on landing Capt. Broke Smith took over F 8 biplane, and flew back to Upavon. Capt. Gerrard took the Short-Wright machine back to Upavon.

There are now 20 new sheds built for the Army competitions.

THE LATE CAPT. E. B. LORAIN— A PATRIOTIC APPEAL.

FROM Lady Loraine, the mother of the late Capt. E. B. Loraine, R.F.C., who whilst flying in the performance of his duty was, together with Staff-Serjeant K. H. Wilson, who accompanied him, killed recently on Salisbury Plain, the following letter has been sent to the Press. We deal editorially elsewhere with this splendid appeal to British patriotism. It is to such mothers and such sons that Britain owes all her greatness in the past, and will hold what she has in the future against all odds, spite of croakers and that new type of degenerate, the "little Englander."

"SIR,—On this the eve of my son's funeral, I ask you of your courtesy to publish this letter, trusting you will deem it timely and likely to have the result which, in loyalty to my son's ideals, I am ambitious to see fulfilled.

"The unanimity with which deep regret has been expressed at the loss of Captain Loraine's services to his country, and the recognition by those in highest authority that his services were of a character of which the Empire stands most in need in the matter of land defence, emboldens me to plead with my countrymen and countrywomen, that they should raise within the next few weeks not only a National, but an Empire Fund to be presented to the Crown; in order that the Royal Flying Corps (an essentially vital

arm of the Naval and Military Services) be put at once upon such a sound financial basis that no alternation of Government, no loss of individual life in pioneer work, may cause the slightest check to the advance movement.

"Our present establishments of both naval and military wings of this *haute noblesse* of military services are pitifully weak as regards numbers compared with those of other European nations. Surely it is not for defence of these islands alone that this arm is needed.

"Sir, I pray that this earnest wish of a sorely stricken mother, who went whole-heartedly every step of the way with her son in his untiring efforts to master the new "craft," may rouse that spirit of patriotism which is ever latent in all those who held allegiance to the Crown.

"They have but to be reminded that their forefathers gave a ship to the nation, or raised a regiment at the time of their country's need; and ceaselessly, in every generation, gave of their greatest treasure, even life itself, to draw forth the uplifting and ennobling spirit of self-sacrifice which will ensure to their descendants the blessings which they have inherited themselves.

"A SOLDIER'S DAUGHTER,
7, Montagu Square, W., July 9th. "FREDA LORAIN, DAME."

TRAGIC DEATH OF HUBERT LATHAM.

It is with great regret that we have to record the passing of Hubert Latham, the aviator who by work on the Antoinette monoplane in 1909 did so much to put the single deck machine in the forefront at a time when the biplane seemed to be most successful. A sportsman through and through and withal a man of leisure, possessed of ample means, he spent his time in various sports and especially inclined to big game shooting. Then the fascination of flying attracted him in the early part of 1909. Teaching himself on the Antoinette, he rapidly focussed the attention of the whole world upon his doings, chiefly by his gradual raising of the height record. Later came the historic crossing of the English Channel, the first unsuccessful attempt being on July 19th, 1909, and the second try a few days later, he again stopping short of the shore. Meanwhile, it will be recalled, success had been won by Blériot. Subsequently he competed with varying success, and his daring flight in a gale at Blackpool in October, 1909, still stands out as a remarkable achievement. One of his last appearances on an aeroplane, previous to his departure on a shooting expedition in the Congo last January, was at Brooklands, when the machine dived down on to the roof of a hangar.

From the scanty despatch received by the French Colonial Minister, it appears that while shooting big game at the confluence of the Bahr Salamat and the Chari, 30 miles north of Fort Archambault, he was attacked and killed by a wild buffalo.

JUVISY TO AMIENS RACE.

THE cross-country race from Juvisy to Amiens and back which had been arranged with the object of assisting the French National Fund, was spoilt to a large extent by strong wind. The start was originally timed to take place at 2 o'clock on Monday afternoon, but it was five minutes to four before Bobba, on a Clement monoplane, the first one to start, got into the air. He, however, only made a flight round the grounds, and then decided not to proceed to Amiens, on account of the *remous*. The other starters were Poulain on his own monoplane, Molla on a R.E.P., Gastingier on a Clement monoplane, Obre on a Caudron monoplane, and Senard on a Blériot. Poulain and Obre followed Bobba's example, and contented themselves with a flight round the ground at Juvisy, but the other three set off in the direction of Amiens. Molla was the first to arrive he taking 1h. 21m. 17s. for the journey of 140 kilom. Gastingier was second in 1h. 49m. 41s. and Senard third in 1h. 52m. 9s.

After a rest of about 40 mins. Molla set out on the return journey which he completed in 1h. 5m. 47s. his speed being 127.69 k.p.h., some 24 kilom. faster than the outward trip. He was the only one to complete before the official closing of the Juvisy control, although Gastingier came in later after making the return trip in 1h. 20m. Senard also started back but retired at Lagny. Molla was thus the winner, while Gastingier was given second place.

The Royal Aero Club of the United Kingdom

OFFICIAL NOTICES TO MEMBERS

Committee Meeting.

A MEETING of the Committee was held on the 16th inst., when there were present:—Sir Charles D. Rose, Bart., M.P., in the Chair, Mr. Griffith Brewer, Mr. G. B. Cockburn, Capt. Bertram Dickson, R.F.A., Prof. A. K. Huntington, Mr. F. K. McClean, Mr. Alec Ogilvie, Mr. C. F. Pollock, Mr. R. W. Wallace, K.C., and the Secretary.

New Members.—The following new Members were elected:—Lieut. Reginald Cholmondeley, F. B. Fowler, F. Henry Fowler, W. Hugh Spottiswoode. Total membership to date: 1,396.

Aviators' Certificates.—The following aviators' certificates were granted:—

243. V. H. N. Wadham (Farman biplane, Sopwith School, Brooklands).
244. Lieut. P. L. W. Herbert (Farman biplane, Sopwith School, Brooklands).
245. 2nd Lieut. A. Christie, R.F.A. (Bristol biplane, Bristol School, Brooklands).
246. Lieut. H. I. Bulkeley, R.E. (Bristol biplane, Bristol School, Brooklands).
247. Lieut. E. V. Anderson (Bristol biplane, Bristol School, Brooklands).
248. R. H. Kershaw (Howard Wright biplane, Grahame-White School, Hendon).
249. Lieut. K. Rawson Shaw (Bristol biplane, Bristol School, Salisbury Plain).
250. R. A. Lister (Bristol biplane, Bristol School, Salisbury Plain).

A letter from the Aero Club of America, requesting the Club to give its sanction to the granting of an aviator's certificate to Mr. R. B. Russell, was considered, and the necessary permission was granted.

Royal Aero Club Special Certificate.—The following Special Certificate was granted:—

5. Lieut. A. G. Fox, R.F.C. (Bristol biplane).

Cross-country course: Lark Hill to Cheltenham and back.

Wilbur Wright Memorial.—It was unanimously resolved to vote a sum of £10 10s. to the fund being raised by the Aeronautical Society to found an Annual Premium Lecture to be called the "Wilbur Wright Lecture."

Military Aeroplane Competition.—At the request of the War Office, the Club agreed to place the services of the Secretary, Mr. Perrin, at the disposal of the Judges' Committee during the Military Aeroplane Competition, at Salisbury Plain, in August.

Hydro-Aeroplane Competition, St. Malo.—A letter from the Automobile Club de France inviting the Committee of the Royal Aero Club to join the Honorary Committee organising the St. Malo contest was read. The invitation was unanimously accepted.

Flights over the Sea.—The following resolution was unanimously passed:—

"Resolved that aviators shall be prohibited from attempting flights over the sea, beyond the three-mile limit, unless suitable precautions have been taken to render their aircraft capable of flotation."

This action has been taken by the Royal Aero Club so that, in the event of an aviator having to descend on to the water, there may be a reasonable chance of his being rescued and thus avoid, as far as possible, a recurrence of the fatal accidents which have happened through flights over the sea having been attempted by aviators on machines that are not capable of floating. The Royal Aero Club feels that it is against the best interests of aviation that unnecessary risks should be incurred, and it will be constrained to take such action as may appear necessary or desirable against any aviator neglecting to take suitable precautions.

Hurlingham Balloon Contest.—The Committee examined the log sheets in connection with the long-distance balloon race from Hurlingham on Saturday, July 13th, 1912, and awarded to Mr. James Radley the cup presented by Mr. A. Mortimer Singer.

The following are the approximate distances accomplished:—

		miles.
1.	Mr. James Radley	Market Drayton, Salop 132
2.	Mr. A. P. Hohler	Pershore, Worcestershire 92
3.	Hon. Mrs. Assheton Harbord	Tetbury, Glos. ... 84
4.	Capt. E. M. Maitland	Southampton ... 66
5.	Mr. G. Dennison	Brighton ... 46
6.	Mr. H. F. Clouth	Brighton ... 46

Mr. A. Mortimer Singer, the donor of the cup, also ascended from Hurlingham the same afternoon, and landed close to Worthing.

Public Safety and Accidents Investigation Committee.

A meeting of the Public Safety and Accidents Investigation Committee was held on Monday, the 15th inst., when there were present:—Col. H. C. L. Holden, C.B., F.R.S. (in the Chair), Mr. G. B. Cockburn, Mr. J. H. Ledeboer, Mr. W. O. Manning, Mr. Alec Ogilvie, Major-Gen. R. M. Ruck, C.B., R.E., and the Secretary.

Club Representatives.—The following official representatives were appointed:—

Yorkshire	...	Mr. Stuart H. Hirst	...	Leeds
		Mr. H. E. Harwood	...	Leeds
(East Riding)		Mr. J. Wilkinson	...	Hull
Southport	...	Mr. Leonard Williamson		
Scotland	...	Mr. J. A. Sillars		
		Mr. John R. Renwick		
		Mr. James G. Weir		

Accident on Salisbury Plain.—The consideration of the report on the fatal accident on Salisbury Plain was deferred.

Flights Over the Sea.—It was unanimously resolved to recommend to the committee of the Club the desirability of prohibiting flights over the sea, beyond the three-mile limit, unless proper precautions have been taken to render the aircraft capable of flotation.

Death of Mr. Hubert Latham.

The sad news of the death of Mr. Hubert Latham was received at the Club with the deepest regret, and messages conveying the sympathies of the members of the Club were sent to Madame Latham and the Aero Club of France.

Late Hon. C. S. Rolls and Mr. Cecil S. Grace.

The Archbishop of Canterbury has kindly consented to unveil the stained-glass window erected in the church at Eastchurch to the memory of the late Hon. C. S. Rolls and Mr. Cecil S. Grace. The ceremony will take place on Friday, July 26th, 1912, at 12.15 p.m.

Arrangements will be made for a saloon to be attached to the Queensborough Boat Train leaving Victoria Station at 10 a.m., and vouchers will be issued to members to enable them to obtain special reduced fares. A purely informal luncheon will be provided at the club flying grounds after the ceremony. In order to facilitate the arrangements, members desirous of being present are requested to forward their names to the Secretary at the earliest possible moment. There are no formalities as regards dress. The return train leaves Queensborough at 4.37 p.m., and a later train leaves Eastchurch at 5.30 p.m., and joins the Boat Train at Queensborough.

British Manufacturers' Sub-Committee.

The ballot for the election of a British Manufacturers' Sub-Committee of the Royal Aero Club has resulted in the following being elected:—

Aeroplane Manufacturers:—

- J. W. Dunne (Blair Atholl Aeroplane Syndicate, Ltd.).
- C. Grahame-White (Grahame-White Aviation Co.).
- L. Howard-Flanders (L. Howard-Flanders, Ltd.).
- H. P. Martin (Martin and Handasyde).
- Lieut. J. C. Porte (British Deperdussin Aeroplane Co., Ltd.).
- A. V. Roe (A. V. Roe and Co.).
- H. Short (Short Bros.).
- T. O. M. Sopwith.
- G. Stanley White (British and Colonial Aeroplane Co., Ltd.).
- Howard T. Wright (Coventry Ordnance Works, Ltd.).

Aeroplane Engine Manufacturers:—

- R. L. Charteris (All-British Engine Co. Ltd.).
- J. E. Hutton (Wolseley Tool and Motor Car Co., Ltd.).
- R. J. Isaacson (Isaacson Radial Engine Co., Ltd.).
- F. May (The Green Engine Co.).
- J. C. Mort (New Engine (Motor) Co., Ltd.).

French Hydro-Aeroplane Meeting.

A Hydro-Aeroplane Meeting will take place on August 24th, 25th, and 26th, 1912, in the Bay of St. Malo. 41,000 francs are offered in prizes, and, among other events, there will be a Hydro-Aeroplane race, on August 26th, from the Bay of St. Malo to the Isle of Jersey and back. Particulars can be obtained from the Royal Aero Club.

166, Piccadilly.

HAROLD E. PERRIN, Secretary.

FLIGHT TECHNOLOGY. DRIFT WIRES.

IN the early days of flying when wing stresses were not investigated closely, the under-wing wires in monoplanes were attached to any part of the undercarriage which happened to be easy of attachment irrespective of the position of the attachment in respect to the main spars. After a little time accidents happened, and it was discovered that there is the possibility of wings folding back along the fuselage when in flight, due to the head resistance of the planes themselves.

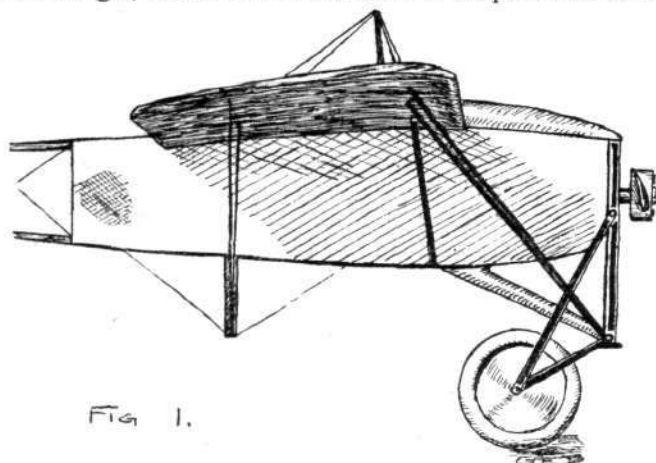


Fig. 1.

Immediately, constructors began to fit drift wires from the front of the fuselage, or from the front skid to a position some distance along the wing.

This served for a time, but a multiplicity of wing wires is not a desirable feature in an aeroplane in these days of reduced head resistance, and drift wires are now being gradually discarded, and the main wires attached somewhere towards the front of the undercarriage, evidently with the idea of taking load and drift at the one time.

Serious trouble is likely to arise if more care is not taken to adjust the angularity of front wires to a close approximation to the

A very strange wing bracing is the Blériot, shown in Fig. 1. Its only virtues, apparently, being its adaptability to undercarriage and *cloche* position.

The "Avro" monoplane, it is interesting to note, is fitted with an extra wire as shown in Fig. 2, to counteract any excess of forward pull which arises through the slope of the main wire being too great.

An arrangement of drift wire shown in Fig. 3 is anything but advisable as it leads to stresses one would not at first imagine.

In the first place, should the main lifting wires be badly adjusted so that a portion of the lifting load is taken by the forward wires, a very large forward pull is exerted, wrenching the rear spar out of its socket.

Secondly, supposing Blériot's theory of top pressure to be at all true there is, even if, as aforesaid, the lift is just taken off the planes a considerable pull downwards on the planes due to the combination of the drift of the planes and the angularity of the forward wires resisting this drift; and thirdly, when making a sharply banked turn it is usual in some machines to warp the outside wing in order to bank more steeply. The drift on this wing is then increased enormously as its tip speed is increased considerably, and its resistance is greater due to the warp, and it is quite possible that the single skid will move sufficiently sideways to prevent the drift wire doing the work it is intended to do.

Undoubtedly the method involving the least possible risk and complication is that shown in Fig. 4 in which the lifting wires are attached to a point beneath the spars themselves, and either an entirely separate and horizontal drift wire is fitted (with little initial tension), or the wings themselves are specially cross-braced inside to withstand such loads as the drift would apply.

Whether the drift wire is fitted to the front or rear spar is a point which changes with different machines, and no hard and fast rule can be laid down.

The angularity of the drift wire is certainly better when fitted to the rear spar, but the great point is which is the weaker spar? Investigations the writer has made during the past few months have revealed the fact that the weakest point in wings in general is usually a high compression in some part of one of the spars, and this one is, in quite the majority of cases, the rear spar.

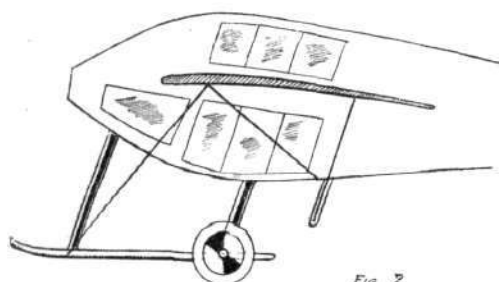


Fig. 2.

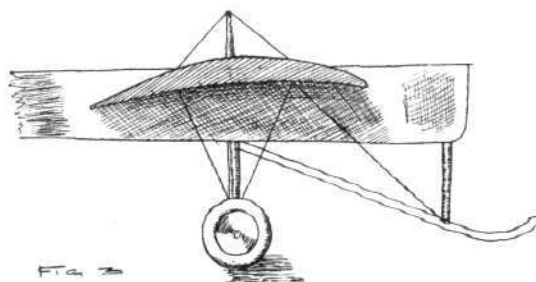


Fig. 3.

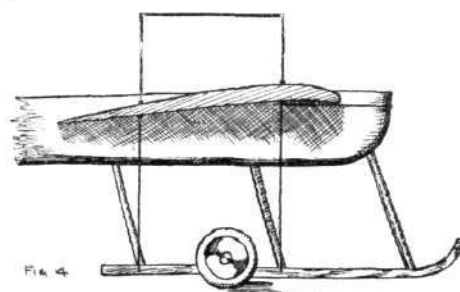


Fig. 4.

lift and drift stresses. For instance, every lifting surface has a ratio of lift to drift, and this is fairly accurately known for normal steady flight by constructors of machines. Now if the main spar wires are attached at a point of the undercarriage, in advance of the main spar itself, the wires, immediately any load comes upon them, exert a force which tends to pull the wings forward.

If this point of attachment is in the correct position to exactly balance the head resistance of the planes, it is, under normal conditions, a simple and mechanically sound method of dealing with drift on planes, but supposing the point of attachment to be twice as far forward as is correct for balancing drift, there is then a force, and quite an appreciable one, trying to wrench out the rear spar from its fastening.

This is only one danger of the combined lift and drift wire, the greater danger, in the writer's mind, being that as the forward pull of the drift wire depends entirely upon the tension in the wire due to load, it follows that when flattening out after a *vol plané*, there must be considerably more load on the wing wires and therefore a considerable amount more pull forward than that just necessary to balance drift.

Further, if Blériot's theory with regard to top pressure on wings is true, even so far as to just removing the lift of the planes when commencing a dive, then there is an increased head resistance due to increased speed, and nothing to counteract this except the rear spar which may or may not happen to be strong enough. Certain it is that if there is no load on the lifting wires, the same cannot exert any anti-drift force.

Now if the drift wire is attached to the rear spar there must, whenever the wire is subject to any load, be a corresponding compression in the spar itself, whereas if the wire is attached to the front spar it is this spar which is subjected to increased compression. If the strength of the rear spar to resist compression is doubtful, then it is far better to fix the drift wire to the front spar and *vice versa*.

GRANVILLE E. BRADSHAW.



German Bomb-Dropping Competition.

UNDER the patronage of the Duke of Saxe-Coburg Gotha a bomb-dropping competition for both airships and aeroplanes is being arranged to take place at Gotha from August 17th to 19th. It is only open to machines of German construction. The conditions are the same for both types of craft, except that whereas missiles from aeroplanes are dropped from a height of 200 metres, those from airships must be at least 800 metres high. It is also proposed to conduct some tests by sending up captive balloons, which will be fired at from flying machines at least 50 metres above them. In the bomb-dropping tests the target will have an area of 100 square metres, and will be distinguishable by being higher than the surrounding land. The missiles must weigh at least 15½ lbs.

A photographic competition is also being arranged, the first prize to go to the aviator who obtains the best three photographs from a height of 600 metres of a piece of ground occupied by troops.

A NEW COMPASS.

THE problem of how to adapt a compass so that a pilot, flying by its means may be enabled to maintain a constant true course in a beam wind, is one to which many brains have, in the past, been applied. The difficulty is apparent. Let us take an example. A pilot intends to follow a course due west from his point of departure. If there is no wind, or if what wind there is is blowing from or towards due west, he has merely to keep the lubber mark of his compass coincident with the W. mark on the compass card and he will eventually arrive at his required destination. But if there is a wind from either one side or the other, difficulties will arise, for if he still attempts to maintain a true westerly course by keeping his lubber mark against the due W. point on the card he will find himself sadly blown off his course. He will have drifted to right or to left, according to the direction of the beam wind.

Readers of FLIGHT will perhaps remember that in September of 1910 we published an article by Mr. L. Graham Davies which dealt with the difficulty of the side wind. In this article Mr. Graham Davies outlined a system by which the machine's true direction could be determined at any moment when flying in a beam wind.

The principle of his system was to dispense with the ordinary fixed lubber mark, and to use as his lubber mark the paths taken by objects on the ground over which the aeroplane may be passing. By arranging a transparent plate on which a single straight line was drawn, so that objects below pursued paths parallel to that line he was able by his system to read off from his compass his true direction at any moment.

To be able to determine one's true direction may be, indeed, very useful. The main point at issue, however, is hard to maintain on a true course, in spite of a beam wind.

This is a problem, a very good solution of which Mr. Eric H. Clift has presented in the new compass he has evolved.

Our sketch gives a good idea of this instrument. From it, it will be observed that the container (a) in which the compass is swung is transparent, that the compass card (b) is quite small in relation to the size of the container, and that the course-pointer (c), the arrow that, once set to the required course, points inflexibly in that direction, is good and large. These are three important points. The fourth is that the compass must be mounted below the pilot, preferably between his knees, so that he can look through the compass at the ground immediately below him. For this reason the container has been made transparent and the compass card small.

Now let us just tell how the compass is used. First of all the pointer (c) has to be set to the course the pilot intends to follow. He draws his course on a map, and we will say, for the sake of example, that it bears due west. He then arranges the pointer (c) to point directly over the due west point on the card (b). This is accomplished by clamping the card (b) to the top of the container by screwing up the clamp (e). Then, by turning the central screw (d), which engages by means of dowel pins in the pointer (c) when the card is clamped up and held stationary, the pointer may be moved to indicate the required course. The clamp screw is then released, the compass swings free, and the pointer will indicate, following out our example, due west.

If there is no wind blowing it is all plain sailing, for it is just a matter of keeping the pointer coincident with the lubber mark (f). The lubber mark, or rather the imaginary line passing through the lubber mark and the centre of the compass is, by the way, coincident with the longitudinal axis of the aeroplane.

Here we come to the condition that the compass has been designed to fulfil. A side wind is blowing. If a course be now steered by keeping the pointer (c) on the lubber mark, it will be observed that objects beneath the aeroplane, seen through the transparent container, will relatively traverse paths at an angle to the course pointer. This will be due to the sideways drift that the wind is causing.

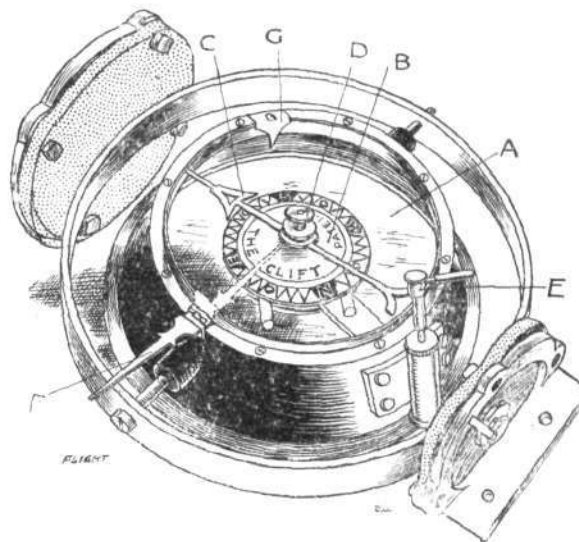
To eliminate this sideways drift, or in other words to maintain a true course, the direction of the aeroplane must be altered so that,

looking through the compass, objects will pass in paths parallel to the pointer.

To condense all this into a few words, the compass has been evolved to assist the pilot in so handling his machine that he shall not drift to right or left of the direction indicated by the pointer.

And it will not matter if the wind changes in velocity or direction while the supposed flight under consideration is in progress, for if either alter, the pilot will be able to detect it immediately from the manner in which objects below travel across the compass and he will re-adjust his rudders to counteract it.

In explaining its method of working to pilots, Mr. Clift tells us it has sometimes been observed "Yes, very nice, but by the time you have reached your destination your aeroplane will have covered a curved course." This is incorrect. True, if, for example's sake, the wind is coming from the right hand forward quadrant, the nose of the machine will be pointing to the right of the true course, but,



THE NEW CLIFT COMPASS.—A. Transparent container. B. Compass card. C. Course pointer. D. Adjusting screw. E. Clamping screw. F. Fixed lubber point. G. Adjustable lubber point.

nevertheless the machine will follow the straight line joining the point of departure, and the destination—it will, virtually, "crab" the whole way.

Two other points of interest the new Clift compass has. In flying in a side wind, maintaining a true course by the method set forth above, the pointer (c) and the lubber mark (f) will be no longer coincident. That the pilot should have something to steer by should he fly into clouds blotting out his view of the ground, an adjustable lubber mark (g) is provided. Finally, should he simply require to take his direction from the compass card, the lubber pointer (f) may be folded down over the top of the compass to facilitate reading.

The mounting of the compass, too, is very interesting. The compass itself is, of course, held in the gimbals. There is only one gimbal ring, but this is swung from the centres of two rubber discs, which in their turn are clamped to aluminium standards. The object of the rubber discs is to insulate the compass from engine vibration. In a few cases where compasses have been fitted it has been found that at certain engine speeds the needle will swing in sympathy with the vibration. This, naturally, renders it useless for steering purposes. In the compass under review this contingency is provided for by means of varying the tension of the rubber discs.



AERONAUTICAL SOCIETY OF GREAT BRITAIN.

Official Notices.

Appointment of Secretary.—Mr. Bertram G. Cooper has been appointed Secretary of the Society to date from August 14th next.

Associate Fellowship Examination.—An examination of candidates for the Associate Fellowship of the Society will be held on March 12th and 13th, 1913. Rules and syllabus of the examination will be issued in due course.

Associate Fellowship Meeting.—There will be a meeting of the Associate Fellows at the Society's offices on September 4th at 5.30 p.m.

Wilbur Wright Memorial Fund.—The following subscriptions have been received:—Amount previously acknowledged, £418 11s.; Messrs. Abel and Imray, £3 3s.; W. M. Jackson, Esq., £3 3s.; Lieut. J. R. F. Lecky, £2 2s.; G. F. Mort, Esq., £2 2s.; Miss M. Dunne, £1 1s.; T. W. Rogers, Esq., £1 1s.; Sir Charles Seely, Bart., £1 1s.; B. G. Cooper, Esq., 10s. 6d.; F. M. Green, Esq., 10s. 6d.; Alex. McCallum, Esq., 10s. 6d.; Charles C. Turner, Esq., 10s. 6d.; total, £434 6s.

11, Adam Street, Adelphi. T. O'B. HUBBARD, Secretary.

BRITISH NOTES OF THE WEEK.

Flying from Portsmouth to Harwich.

ACCOMPANIED by his mechanic, Artificer O'Conner, Com. Samson on Saturday started from Portsmouth to fly round the coast to Harwich. Rough weather was experienced in the Channel, and the Short hydro-aeroplane alighted in Dover Harbour. It was moored to a buoy, where it rode safely during the night. On Sunday morning the machine was taken on the beach for some slight repairs to be made and afterwards it re-started for Harwich, which was reached safely. The total distance covered was about 250 miles.



One of the Henry Farman military biplanes, just taken over by the British War Office, in flight.

Mr. Hewitt at Rhyl.

ON Tuesday evening Mr. Vivian Hewitt was up on his 50-h.p. Gnome-Blériot monoplane for an hour and a-half. He left the aerodrome at Foryd at 7.30, and landed back at 9, in the meantime flying round the castle at Rhuddlan, and going on to St. Asaph

and circling the cathedral, this being the first appearance of an aeroplane there. He afterwards flew over to Prestatyn along the shore, and circled round about Rhyl at varying heights. As he had ordered dinner at 8 o'clock he thought of the novel way of saying what time he would be in, and succeeded in dropping a note in the road at Rhyl from the aeroplane, the note having been written at the aerodrome before he started and weighted-up with washers. In landing he nearly smashed-up, as after switching off at about 500 ft. up he misjudged the distance. He saw that he was going to hit the fence at the edge of the aerodrome, so elevated just as the front wheels struck. The fence was knocked flat, and the skid bounced over. Fortunately the posts were rotten, but he thinks it speaks marvellously well for the landing chassis, as nothing whatever was damaged.

Lieut. Porte at Nuneaton.

ALTHOUGH handicapped by a gusty wind and the smallness of the fields, Lieut. J. C. Porte, on his Deperdussin, made one or two flights at Nuneaton on Friday, to the delight of the crowd which foregathered. Slightly better weather prevailed on Saturday, and then the 2-seater Deperdussin was seen at its best, Lieut. Porte taking it up to a great height, and being enthusiastically applauded.

The Daily Mail Demonstrations.

ON the 11th inst, the Farman hydro aeroplane started on its tour from the Hamble River, the destination being Bournemouth. The machine was piloted by Fischer and carried as passengers Mme. Fischer and Mrs. Holt Thomas. On arrival at Bournemouth some big waves struck the floats causing a couple of struts to give way and letting the machine down on the water. Unfortunately the all too-willing helpers who quickly arrived in boats and launches did not improve matters. By some means after Mrs. Holt Thomas had been taken off the machine capsized, and M. Fischer and his wife had an involuntary bath. They were, however, rescued little the worse for their adventure.

Early on Thursday week Mr. Hucks flew over from Birmingham to Wolverhampton and gave several exhibition flights, going up in one to a height of 2,000 ft. before leaving for Derby in the afternoon. On Saturday, after flying at Derby he went on to Mansfield, where some exhibitions were given before an enthusiastic crowd on Monday.

On Tuesday Mr. Hamel was at Hull and gave several flights, starting from the Hendon racecourse. He was presented with a gold sovereign purse as a memento of the occasion and afterwards flew over to Grimsby, where some exhibition flights were given in the evening.

M.P.s to See Aeroplane Trials.

IT is good news that advantage is to be taken of the opportunity afforded by the Army aeroplane trials on Salisbury Plain at the beginning of next month, to let Members of both Houses of Parliament learn something of what the modern flying machine is capable. The Army Council has made arrangements for Peers and M.P.s to witness the trials on August 8th.

The Dublin to Belfast Race.

THE 200-mile race from Dublin to Belfast and back, which is being organised by the Aero Club of Ireland, is to take place on September 2nd.



Two Henry Farman military type aeroplanes last week very successfully passed every test required by the British War Office before taking over the machines, the tests finishing up with a *vol plané* with the motor stopped from 4,500 ft. Our photograph shows one of the machines on the ground.

SECOND JULY MEETING, HENDON.

IN spite of the fact that most of the well-known pilots were away from Hendon last Saturday, two good races were decided, and some excellent exhibition flights given. Some considerable interest was caused, too, by the appearance of a machine and pilot, new to Hendon—the Breguet biplane and René Moineau. Unfortunately it did not participate in any of the races, and Moineau did not arrive at Hendon from France until shortly before 5 o'clock, when presently he gave some exhibition flights.

Proceedings were opened a little after 3 o'clock by Otto Astley, who gave two short flights on the 50-h.p. Gnome-Blériot No. 6, and by Jules Nardini on his 50-h.p. Gnome-Deperdussin. Nardini got away and well up very quickly, and did some very fast flying. On descending, however, he was unfortunate enough to smash his propeller, and he did not get a fresh one fitted until 5.30 p.m.

At 4.20 p.m. Marcel Desoutter put in some very decent flying on the 50-h.p. Gnome-Blériot—his first appearance on this machine.

It was decided to hold a speed handicap of 6 laps in place of the relay race—the first item on the programme. This event started at 4.40 p.m., Astley on the Blériot being scratch, Sabelli on the Deperdussin having 1 min. 39 secs. start and Turner on the Grahame-White Farman (No. 9) 2 mins. 22 secs. Astley lost 44 secs. in starting, but managed to catch the others up very quickly. He could not get first place, however, for in passing Sabelli—he was one lap behind the latter—he got blown some way out of his course. Turner came down after four laps, owing to engine trouble, so the race went to Sabelli, who won by 1 min. 8½ secs.

Immediately after the speed handicap, Moineau came out on the Breguet, and did a few circuits of the aerodrome, the 100-h.p. Gnome with the four-bladed propeller making a noise like an electrical

generating station. Moineau flew high, and finished up with a *vol plané*. Desoutter also gave an exhibition flight of nearly half-an-hour's duration, flying outside the aerodrome several times and diving over the sheds.

At about 5.30 p.m. the Grand Speed Handicap started; this was flown in two heats of four laps each, and a final of six laps. Nardini, with 15 secs. start, and Astley at scratch, made up the first heat, and Turner (Grahame-White Farman) with 1 min. start, and Sabelli (scratch) flew in the second heat. Nardini had to retire from the first heat, which, therefore, went to Astley, whose time was 7 mins. 23 secs. Sabelli won the second heat by 21 secs., his time being 8 mins. 59 secs.

The final heat ended in a close finish between Astley and Sabelli, the former winning by 6½ secs.

After this race, Moineau and Desoutter went up on the Breguet biplane and the Blériot monoplane respectively, Desoutter flying about outside the aerodrome. Just before 7 o'clock, Verrier was sighted returning from Brooklands in the Maurice Farman. He was about 3,000 ft. high, and when just outside the aerodrome descended with one of his delightful "*pancakes*." Being against the wind, the biplane seemed, at times, to be almost stationary. He landed at 7.1 p.m., having taken 35 minutes to complete his journey from Brooklands; Mr. Clement Greswell was with him as passenger, and a British and French flag was displayed, one at each end strut. After Verrier had landed, the Breguet went up again, to be followed by Verrier with a passenger, after which all the machines retired for the night.

Speed Handicap (6 laps), held in place of Relay Race. Prizes presented by Maurice Farkoa, Esq., and Arthur Bouchier, Esq.

	Handicap	Net
	cap.	Time.
	m. s.	m. s.
1. G. Sabelli (35-h.p. Anzani-Deperdussin)	1 39	13 6½ 12 23½
2. O. Astley (50-h.p. Gnome-Blériot) ...	Scratch	14 15 11 46
3. L. Turner (50-h.p. Gnome-Grahame-White-Farman)	2 22	Did not finish

Grand Speed Handicap (final, 6 laps).

Prizes presented by Miss Florence Parbury.

1. O. Astley (50-h.p. Gnome-Blériot) ...	Scratch	11 17½	10 0½
2. G. Sabelli (35-h.p. Anzani-Deperdussin)	1 17	11 24	11 24

THE ROYAL FLYING CORPS.

THE following official appointments to the Corps were announced in the London Gazette of Tuesday last:—

Military Wing.

Lieut. Basil H. Barrington-Kennett, Grenadier Guards, to be Adjutant. Dated May 20th, 1912.

Quartermaster and Honorary Lieut. Walter J. D. Pryce to be Quartermaster. Dated June 20th, 1912.

The undermentioned appointments have been made:

Squadron Commanders, with the temporary rank of Major while so employed. Dated May 20th, 1912: Capt. Charles J. Burke, the Royal Irish Regiment; Capt. Henry R. M. Brooke-Popham, the Oxfordshire and Buckinghamshire Light Infantry; Capt. Alan D. Carden, Royal Engineers; and Capt. Edward M. Maitland, the Essex Regiment.

Flight Commanders. Dated July 1st, 1912: Capt. Clement R. W. Allen, the Welsh Regiment; Capt. George H. Raleigh, the Essex Regiment; and Capt. Patrick Hamilton, Worcestershire Regiment.

Flight Commanders, with temporary rank of Captain while so employed. Dated July 1st, 1912: Lieut. Bertram R. W. Beor, Royal Artillery; Lieut. Daniel G. Conner, Royal Artillery; Lieut. Clive M. Waterlow, Royal Engineers; and Lieut. Herbert R. P. Reynolds, Royal Engineers.

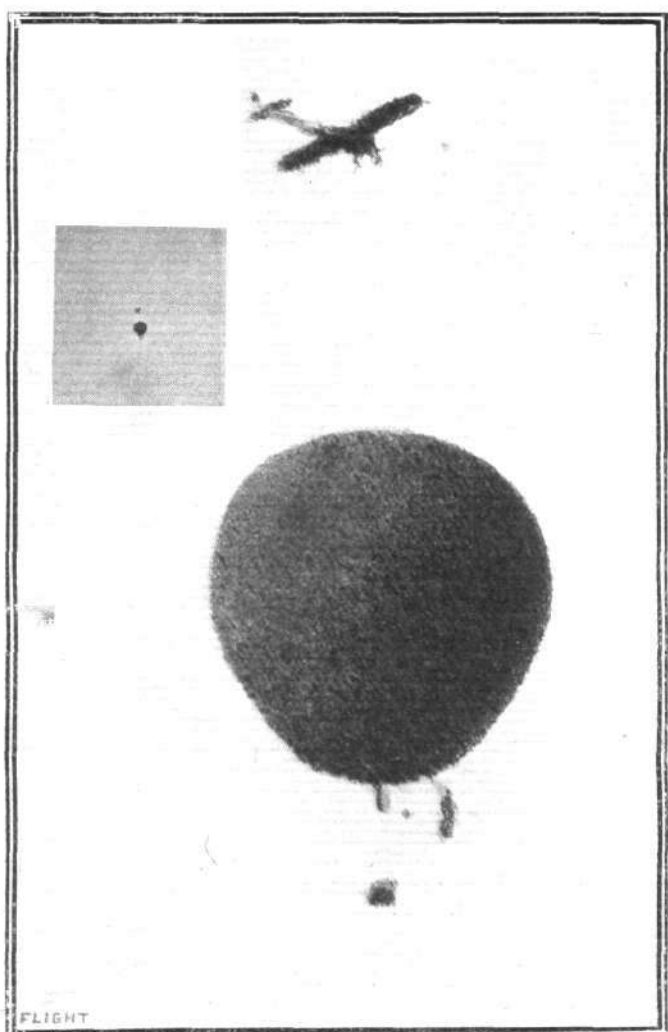
Flying Officers. Dated July 1st, 1912: Capt. George W. P. Dawes, Princess Charlotte of Wales's (Royal Berkshire Regiment); Lieut. Charles A. H. Longcroft, the Welsh Regiment; Lieut. Garthshore T. Porter, Royal Artillery; Lieut. Cecil T. Carfrae, Royal Artillery; Lieut. George B. Hynes, Royal Artillery; Lieut. Thomas G. Hetherington, 18th (Queen Mary's Own) Hussars; Lieut. Alan G. Fox, Royal Engineers; and Lieut. John N. Fletcher, Royal Engineers.

Central Flying School.

Quartermaster and Honorary Lieut. Frank H. Kirby, V.C., from Royal Engineers, to be Quartermaster. Dated May 20th, 1912.

Special Reserve of Officers.

ROYAL FLYING CORPS.—*Military Wing*.—The undermentioned to be Second Lieuts. (on probation). Dated July 17th, 1912: Ronald Louis Charteris and Robert Ogilvie Abercromby.



"Flight" Copyright.

The incident of Mr. Gustav Hamel flying at Hendon Aerodrome round one of the balloons which had just before started from Hurlingham in connection with the Royal Aero Club balloon race for the Hedges Butler cup. This photograph was secured at about two miles distance, and by way of comparison, inset is a contact print from the original negative, the enlargement being untouched.

THE ST. MALO-JERSEY HYDRO-AEROPLANE COMPETITION.

THE full regulations governing the competition for hydro-aeroplanes which has been organised by the Automobile Club of France, to take place at the end of August, at St. Malo, have now been issued. The contest will comprise three speed tests, two of which will be held in St. Malo Bay and the third over a course from St. Malo to Jersey and back, with a stop at Jersey. There must be at least 6 entries to ensure the holding of the event, while the maximum has been fixed at 30. The six prizes are 15,000 francs, 10,000 francs, 6,000 francs, 4,000 francs, 2,000 francs, and 1,000 francs. The event is international and entries close on July 27th, the fee being 1,000 fr. The competition will be started on the system usually adopted for motor boats by means of flags and a gun. In the first event the competitors will have to double the light of the Grand Jardin and return over St. Sarvan round a pylon by the town back to the Grand Jardin light and finishing at the starting point, which will be an imaginary line between the light on the pier and a pylon at the north angle of the fort of the city. On the second day the course will be round the light of Rochebonne and the semaphore at Decollee, returning to the starting point. For the overseas race on the third day, the competitors will start over the usual line and then go to the east of the light of the Isle of Chausey, the finish being in the Bay of St. Aubin at Jersey, between the light at St. Helier Harbour and the St. Aubin Castle. The return journey will be over the same course. The time of the stop at Jersey will be taken as that between the times the competitor crosses the imaginary line, and this will be allowed the competitor in his total time, provided it does not exceed thirty minutes. The awards will be based on marks gained on the following scale. In the first two events two marks for a win, four for a second, six for a third and so on, while in the overseas flight the scale will be one mark for a win, two for a second, three for a third and the machine with the lowest marks will be the winner. Bonuses for passenger-carrying will be allowed on the following scale. Ten-sixtieths for the first passenger, eleven-sixtieths for the second, twelve-sixtieths for the third and so on, the allowances for each passenger being added together and the total deducted from the competitors' time. The allowance for three passengers for instance would be 33-60. The passengers must occupy proper seats on the machines but in the overseas flight ballast may be carried in lieu of passengers at the rate of 65 kilogs. per person. The machines need not carry the same number of passengers in all the events, but they must not be altered during an event and no competitor may take part in an event unless he has regularly completed the previous one.



The Aeroplane in War.

BY way of adding a companion to their volume "The Aeroplane, Past, Present and Future," Messrs. Claude Grahame-White and Harry Harper have collaborated in the production of a book entitled "The Aeroplane in War." As might be inferred from the title, it deals with the aeroplane from a military point of view, and although the authors are careful not to dogmatise as to the requirements and the use of military aeroplanes, they have set out in a most useful way a vast amount of the information that is at present obtainable on the subject. Opening with a tersely written summary of the progress in the early days of the aeroplane, the authors proceed to deal with the experiences with flying machines at the 1910 French Manœuvres at Picardy. Subsequent feats which have been accomplished by aviators are then discussed, together with the value of such accomplishments from the military point of view, while the improvements in the design of the machines come in for lengthy consideration. It has been said that the next war will be conducted very much on the lines of a great game of chess, the rival commanders being kept continually informed as to the position of the pieces by the aviators attached to their forces, and those who have paid any attention to the great progress recently made both in construction and navigation of aerial craft, must realise how true this is. This book is one which would appeal to all thoughtful students of flight, who realise the grim possibilities of aerial warfare, and wish to understand some of the problems which have to be solved. The book, which is illustrated by a number of photographs of machines built for military use, etc., is published by Mr. Werner Laurie, at 12s. 6d. net.

All The World's Aircraft.

FOR its third year of issue, Mr. Fred T. Jane's Annual appears under the above title; "Aircraft" very wisely supplanting the term "Airships." When the idea of the Year Book was first conceived it seemed as though the dirigible balloon was likely to become the chief method of navigating the air, but times have changed since then, and hence it has been thought advisable to adopt the more comprehensive title of "Aircraft." For the same reason it has been found practically impossible to continue making the book an index to

AIRSHIP NEWS.

The Siemens-Schuckert Airship.

CONFLICTING rumours are abroad as to the fate of the Siemens-Schuckert airship. According to one version she is recognised to be a failure and is to be scrapped, while the *Lokalanzeiger* states that she has been purchased by the Minister of War, which is much more likely.

Long Cruise by "Victoria Louise."

THE Zeppelin cruiser "Victoria Louise" carried out another long overseas flight last week-end. With fourteen passengers, including four representatives of the German War Office, Hamburg was left at 12.13 a.m. on Saturday morning, and passing over Kiel the airship made her way over the Baltic to the Danish island of Moen. The dirigible then returned along the Mecklenburg coast to Hamburg, which was reached at 9.45 a.m., having by then covered some 340 miles, of which 125 miles were over the open sea. It is stated that the German Government propose to purchase this airship for £25,000.

Machine Guns for Dirigibles.

THE latest Parseval airship, which should shortly be running her trials, is to be armed with a couple of machine guns, while she will also have bomb-dropping tubes which have been designed on the results of some experiments in bomb-dropping made with P3. A machine gun is also being fitted to the Z3.

"Schutte Lanz" Back at Mannheim.

ON Tuesday of last week the German dirigible "Schutte Lanz" returned to her headquarters at Mannheim from Cologne.

16 Hour Cruise by "Conte."

AT 6.11 p.m. on Thursday the new Astra dirigible "Conte" left Issy on her ten hour trial trip before being taken over by the French military authorities. This was more than fulfilled, as the airship did not land until 10.36 the next morning, by which time she had been up 16 hours 24 mins., and only half the supply of petrol, &c., had been exhausted. Nine persons were on board, M. Kapferer being in command.

"Clement Bayard" Visits Issy.

SOME excitement was occasioned in Paris, just before 9 o'clock on the evening of the 11th inst., by the appearance of the "Clement Bayard" airship, the car of which was lit up by little electric lamps. She had left her headquarters at La Motte-Breuil at 6.45 p.m., and at 8.50 a landing was effected at Issy. Nineteen persons were carried during this trip, but in one of an hour and a half over Paris on the following day 21 people were taken up.



every machine ever built, and so this last volume is more or less confined to a review of aeroplane and dirigible work carried out during the past year in all parts of the world. As far as possible the various national sections have been revised and checked by some authoritative person on the spot, thus adding considerably to the value of the book. Otherwise, the arrangement of the different sections follows the system adopted in the first two issues, the entries being grouped under their various nations in alphabetical order, there being subdivisions for aeroplanes and dirigibles. The book also gives lists of clubs, flying grounds, military and naval machines, private aviators, &c., and at the end is a complete directory of the aeronautic industry. For reference purposes it is invaluable. The work is published by Messrs. Sampson Low, Marston and Co., at the price of one guinea net.

What the School-Boy Thinks.

MR. FRED T. JANE, founder and editor of the flying annual, *All the World's Aircraft*, has, by kind permission of the headmaster, instituted at his old school—Exeter—a yearly prize for the best paper on aerial matters. The first examination has just taken place, and the winner, Thorne II, obtained a total of 157 marks out of a possible 170. Another boy was not far behind; the general level of all the boys who entered the competition was good, a very pleasing indication that the coming generation is more interested in the sky than the present one.

There were, of course, one or two amusing "howlers" in some of the papers, as, for instance, a reply to a question as to the principal points of resemblance and difference between a Blériot monoplane and a bird:—

"If it did not need a propeller, it would look very like a bird. It resembles a bird chiefly in its outstretched wings and wooden back. The chief difference is that no bird sings in the same way as the motor."

This same boy, however, answered some more difficult questions extremely well.

The following item given about Latham is of interest. "He is a very calm, collected man, a hard and enthusiastic smoker, as he was once found smoking in his aeroplane, floating on the sea."

FOREIGN AVIATION NEWS.

A Round Trip of Calls on a Zodiac.

ACCOMPANIED by Comte de la Vaulx on his Zodiac biplane, Debroutelle, left St. Cyr on the 10th inst., went over to Buc, then on to Issy, and on the way back to St. Cyr called at Villacoublay.

St. Cyr-Etampes-Juvisy-St. Cyr.

ON his Maurice Farman biplane, Lieut. Mauger de Varennes with his machine left St. Cyr on the 10th inst. and made a round trip over Rambouillet, Etampes, Juvisy and back to St. Cyr flying mostly at an altitude of 800 metres.

Villacoublay to Belfort on a Deperdussin.

LIEUT. GOURLEZ on the 12th made a flight on his Deperdussin monoplane from Villacoublay to Belfort, making a stop at Troyes. He was much buffeted by the wind.

Over the Fontainebleau Forest.

ON his M. Farman biplane, Lieut. Faucompre on the 12th went from Juvisy to Nogent-sur-Seine, making a stop of an hour at Etampes. During the trip he traversed the whole length of the Fontainebleau Forest.

Cross-Country on Farman Hydro-aeroplane.

RISE from Lake Enghien on his latest Henry Farman hydro-aeroplane, on Sunday, Chevillard followed the river Seine, and after a quarter of an hour's flight came down on the river just by the Sevres bridge.

Villacoublay to Etampes and Back.

ON an Astra biplane on Saturday evening Commandant Felix left Villacoublay and after half an hour's flying landed at Etampes. He returned to Villacoublay on Sunday morning.

A Blériot Escadrille at Nancy.

ON Saturday and Sunday some long reconnaissances were carried out by Lieuts. Bellemois, De la Morlaye, and Sylvestre on Blériot monoplanes along the French eastern frontier from Nancy. On Saturday, in a 150-kilom. trip, they scouted in company round Baccarat, Rambervilliers, Charunes, and Bargon, and on Sunday, Lieut. Bellemois made an hour's flight in the direction of Champey, and also had a peep at the military camp at Metz.

Legion of Honour for Aviators.

M. ARMAND DEPERDUSSIN, constructor of the famous monoplanes bearing his name, and vice-president of the Chambre Syndicale des Industries Aéronautique, is included in the last list of persons nominated Chevalier of the Legion of Honour; while the military list comprises the names of the military aviators, Capt. De Goys, Duperron, Brenot, Casse, Letourneur, Lebeau and Coville, and Lieuts. Peralda, Reimbert, Texier, Govin, Lussigny, De Lafargne and De Marzac. Martinet, Helen and Loridan, officers of the reserve, have been given the Cross of the Legion of Honour.

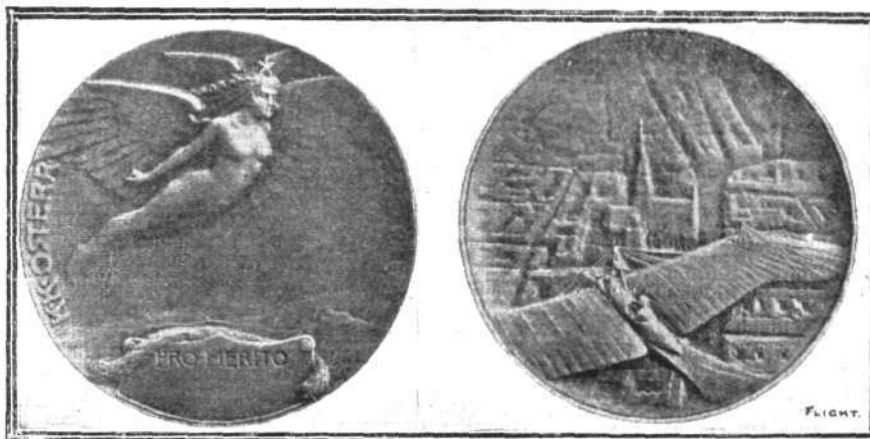
For services rendered to aviation, Sergeant Mousseau, Adjudant Artesiano, Adjudant Sumont and Sapper Tiersch have been awarded the military medal.

Wings to Aid Skis.

FOLLOWING on the experiments which have been made with "aivettes," M. Bernard J. Dubos has suggested that exponents of this delightful sport should have wings attached to their shoulders so that they might be able to increase the length of the periods in the air. The idea is now being worked out by M. P. de la Valette, and it is hoped that some practical experiments may be made shortly.

Fatal Accident to Olivieres.

WHILE giving an exhibition of flight at Bourg, on Monday, in aid of the National Fund, Olivieres met with an accident which ended fatally. He had made a short flight and started another, going rapidly to a height of 150 metres. He then started a *vol plané*, when at a height of 100 metres the machine apparently encountered a remous and dropped to the ground. When rescu-



The new medal for merit of the Austrian Aero Clubs, modelled by Gastav Gurschner of Vienna.

from the débris he was unconscious, and succumbed to his injuries very shortly afterwards.

A New Henry Farman Superior Pilot.

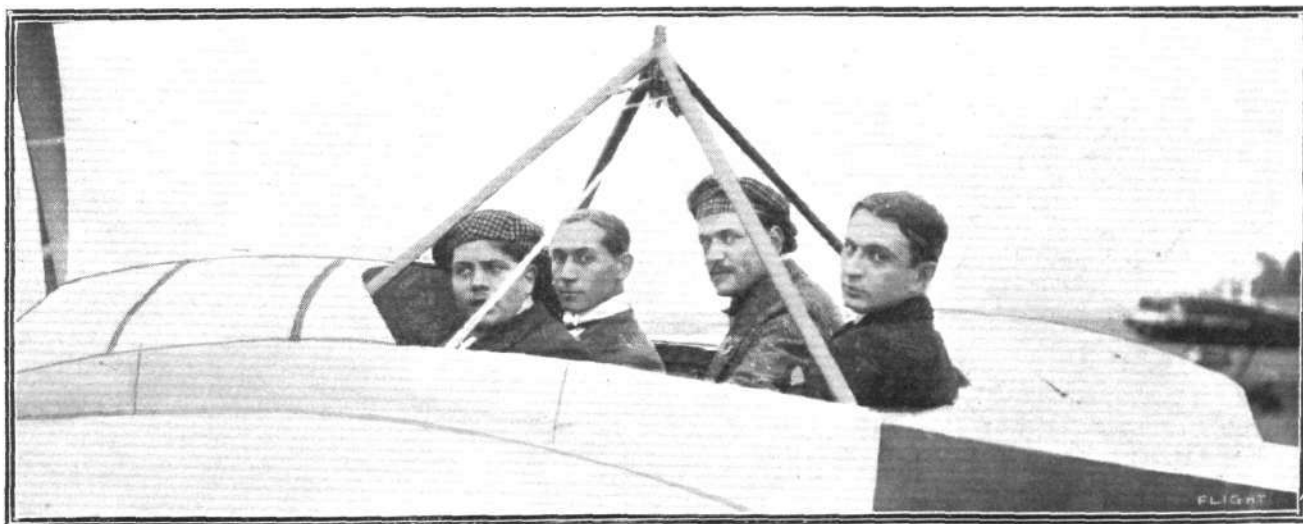
ON the 12th inst., Sergt. Postulat, on a Henry Farman biplane made his third test for a superior military *brevet*, flying over a course from Rheims to Mailly, Monthons, and back to Rheims.

A New R.E.P. Superior Pilot.

LIEUT. PRECARDIN on a R.E.P. monoplane completed his tests for French military *brevet* on the 12th inst., flying over a course from Buc to Orleans and Chartres and back to Buc, the speeds being 130 k.p.h.

Brussels to Ostend in 54 mins.

ON Monday, Comte d'Hespel left the Berchem aerodrome near Brussels at 6.5 p.m. and with his Deperdussin flying in fine form landed on the front at Ostend at 6.59, the 124 kiloms. having taken 54 mins. His speed averaged 145 k.p.h., his altitude 1,200 metres.



A FREIGHT OF FOUR IN THE MILITARY HANRIOT MONOPLANE.—From left to right: Messrs. Hanriot, jun. Sippe, Frey and Bielovucic.

Berlin to St. Petersburg Flight.

ON Sunday morning, Abramowitch, on his Wright biplane, left Johannisthal flying ground, near Berlin, to fly with a passenger to St. Petersburg. He was brought down by motor trouble at Driesen, about 50 miles from Posen, but hoped to continue as soon as repairs were effected.

The Kaiser and Hydro-Aeroplaning.

AGAIN showing his great interest in matters aeronautical, the German Emperor has offered a prize for a hydro-aeroplane competition to be held between August 29th and September 5th.

Military Aviation in Italy.

THE Italian Government have decided to form a regular regiment of aviators, divided into two companies, the officers of which will be a Lieut.-Col., a Major, twelve Captains, and twenty-four under Lieutenants and Sub-Lieutenants. It is also proposed to properly organise the military aviation and aeronautic school.

Aerial Touring in Russia.

By the time he arrived at St. Petersburg on the 10th inst., Lieut. Andreadi, who left Sebastopol on June 15th, had completed an aggregate distance of 1,670 miles on his Nieuport monoplane.

Royal Passengers in Austria.

A LARGE party of guests at the Royal wedding at Baden last week were taken in motor cars to Wiener Neustadt flying ground by Archduke Frederick; and three princes, Prince George of Bavaria, the Duke of Calabria, and Prince Etienne of Croy were taken for trips by Austrian officers on military aeroplanes.

Austrian Government Buys a High Flyer.

THE Austrian military authorities have, we learn, purchased for £35,000 the Lohner-Arrow biplane, fitted with 120-h.p. Austrian-Daimler engine, with which Lieut. Blaschke recently beat the passenger height record.

More Aeroplanes for Austrian Army.

IT is announced from Vienna that the Austrian Minister of War has just given orders for the construction of a further thirty-five aeroplane for military use. The Austrian Army will then have fifty-one machines at its disposal.

The Leipzig-Dresden Race.

IN connection with the flying meeting arranged at Dresden, a race was organised from Leipzig which was won by Hirth on his Rumpler monoplane. For the duration prize at Dresden, Schmidt on a Farman biplane was first, and Kahnt on a monoplane second, while for the passenger prize the position of these two were reversed.

Fatalities in America.

THE first fatality at Mineola field N.Y. occurred a week or two back when Taylor, a mechanic, having obtained permission to do some rolling, got the machine in the air and then lost control. He sustained injuries to which he succumbed. On Saturday, V. M. Smith was killed at Palo Alto in a fall from a height of 50 ft.

FRENCH GORDON-BENNETT TRIALS.

IN the French eliminating trials for the Gordon-Bennett Trophy, held at Rheims on Sunday last, Vedrines on his Deperdussin monoplane scored an easy victory and also set up new speed records from 10 to 200 kilometres. A foretaste of what the Deperdussin was likely to do was given on the 12th inst., when Prevost covered 100 kiloms. in 37 mins. 29 secs., at a speed of 160.76 kiloms. an hour. In the actual trials he did better than this, while Vedrines was actually nine kilometres faster. The trials resulted in Vedrines securing first place, he covering the 200 kilometres in 1h. 10m. 50s., at an average speed of 169.9 k.p.h. Prevost was second in 1h. 13m. 3s., at a speed of 164 k.p.h., and Frey on the Hanriot was third, his speed being 145 k.p.h.

NEW RECORDS.

Vedrines' New Speed Records.

THE new records made by Vedrines in the G.-B. Trials, as well as the old ones which also stood to the credit of Vedrines, are:—

Speed.			
kiloms.	m.	s.	h. m. s.
10 in	3	33	(3 34½)
20 "	7	8	(7 14)
30 "	10	41	(10 53½)
40 "	14	14	(14 32½)
50 in	0	17 46	(0 18 10½)
100 "	0	35 23	(0 36 23½)
150 "	0	53 3½	(0 54 37½)
200 "	1	10 49½	(1 15 20½)

Time.			
hour.	kiloms.	hour.	kiloms.
¼ ...	45.664 (40.374)	1 ...	169.810 (164.331)
½ ...	84.665 (80.374)		

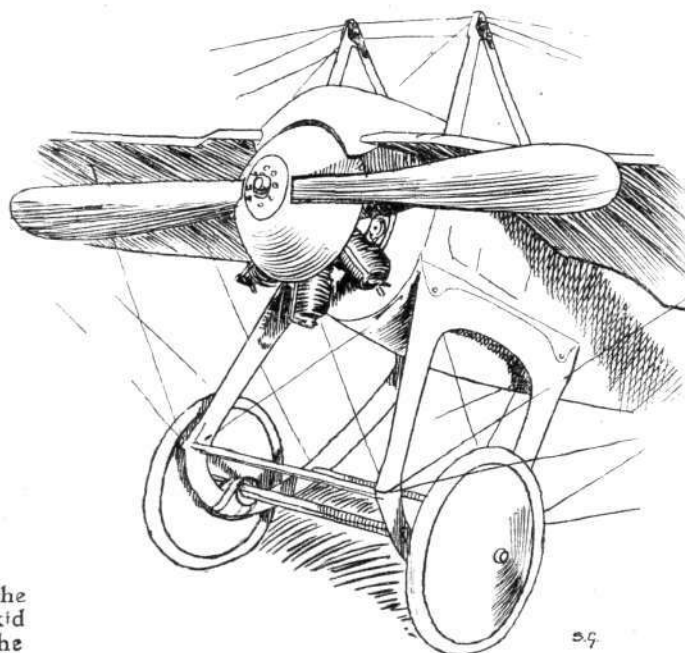
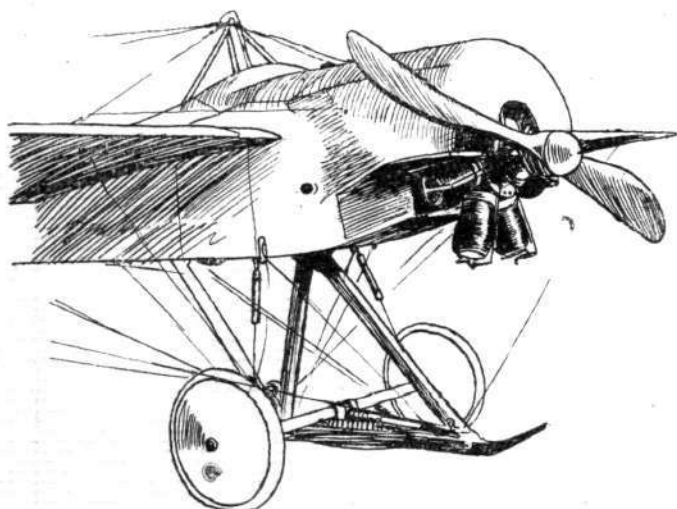
Fastest speed.
170.610 kiloms. (167.910 kiloms.).

Frey's New Passenger Records.

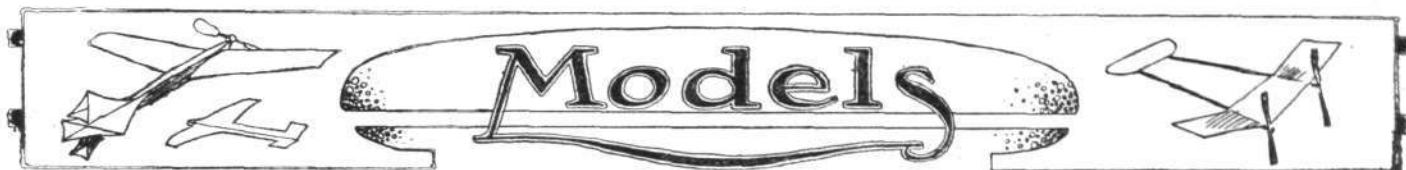
On the 10th inst., at Rheims, Andre Frey on a military two-seater side by side Hanriot machine beat the passengers records from 10 to 100 kilometres recently made by Legagneux. The new figures as well as the old ones are given in the following table.

kiloms.	m.	s.	m.	s.	kiloms.	h.	m.	s.	h.	m.	s.
10 ...	4	30½	(4 45½)		50 ...	0	22	31½	(0 23 59)		
20 ...	9	1	(9 32)		100 ...	0	44	50½	(0 48 3½)		
30 ...	13	30	(14 21½)		150 ...	1	7	19	(1 13 4)		
40 ...	18	1	(19 9)								

The average speed worked out to 135 k.p.h. (84 m.p.h.). The passenger was M. Frey's friend, Moteau, who, by the way, weighs 75 kilogs. (just under 12 stone).



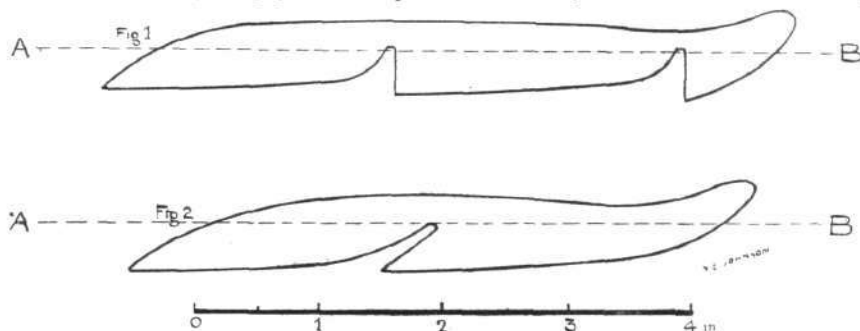
TWO NEW FORMS OF LANDING CHASSIS.—On the left, that of the new Zens monoplane, which has a single skid to which is strapped, by rubber bands, the axle joining the two landing wheels. The body of the machine is supported by a single rank of chassis struts, and is steadied by two shock-absorbers in tension, one on either side. On the right is the front of the latest Deperdussin monoplane, the "Monocoque." The spun cowl over the motor is to further reduce head resistance.



Conducted by V. E. JOHNSON, M.A.

Hydroplane Floats.

MR. F. S. GORDON (Scottish Ae. S. Model Aero Club) writes, thanking us for the attention recently given to hydro-aeroplanes; in his letter he says: "I can assure you the ordinary 'flyer' is—with a few exceptions—getting quite stale up here, and is only to be seen



Figs. 1 and 2.—Two types V.E.J. stepped floats. AB = water line.

about once a month. I have been following with interest your notes on floats, and have made a set of three of the section shown in FLIGHT (V.E.J. type). They appear to be very efficient. The Voisin type are fairly good as hydroplanes—the model rising very easily with them. I have discarded the torpedo or tubular type entirely."

Mr. Gordon also sends the following calculations *re* size of floats required for a model of given weight—weight meaning the inclusive weight of everything. Let us suppose the weight of the complete model to be 16 ozs. Now, 1 cub. in. supports approx. '037 lbs.

$$\therefore \frac{1 \times 1}{.037} = 27.02 \text{ cub. in. required,}$$

add $\frac{1}{4}$ for safety factor and we have 33.775. Assume the floats 3 in. chord by $\frac{3}{4}$ in. deep at 1 in. from leading edge,

$$\therefore \frac{3 \times 3 \times 2}{4 \times 3} = 1\frac{1}{2} \text{ in. sectional area.}$$

Now $33.775 \text{ cub. in.} \div 1\frac{1}{2} = 22.516 \text{ in. for span of float—}$

$$\therefore 2 \text{ floats } 7 \text{ ins.} \times 3 \text{ ins.} \times \frac{3}{4} \text{ in.}$$

$$1 \text{ float } 8 \text{ ins.} \times 3 \text{ ins.} \times \frac{3}{4} \text{ in.}$$

would suit, allowing for weight of floats at $\frac{1}{2}$ oz. each, and one-quarter safety margin on total weight of model.

We shall be pleased to hear what any of our readers who are experimenting with floats have to say with reference to the foregoing. Personally we should say a 8 to 10 oz. model—hardly a 16 oz.

Stepped Floats.

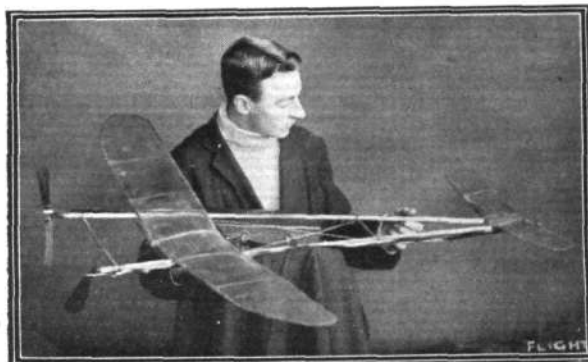
According to the *Westminster Gazette* of July 9th, stepped floats are the subject of letters patent granted to Mr. A. E. Knight (January 10th, 1907), and users of the same are (very probably in all innocence) infringers thereof. The number of the patent is not given, but the date of application was August 2nd, 1906. Apart from the question of patents, which does not concern us, there is one very interesting point dealt with which was raised in the last issue of FLIGHT. The remarks are accompanied by three diagrams, the second of which shows the position of the hydroplane when at rest—the water line is shown—and the top of the tread of the steps (there is but one) is above the water line. Previous to seeing the *Westminster Gazette* I had tried some experiments on the air tube method referred to in last week's issue. The method consisted in hauling through the water—a solid wooden stepped float—containing a smooth copper tube, in which was floated a little round wax pellet. It was found that on the hydroplane rising sufficiently to let in air from the sides the pellet was immediately swept out of the tube and left behind—but not so far as I could ascertain before that occurred. As a result of this experiment I designed the stepped float shown in Fig. 1, which, it must be confessed reminds one somewhat of the gargoyles on Notre Dame—the tread of the steps is, it will be noticed, very deep compared with the depth of the float. Finally, the animal, *i.e.*, the float was decapitated and given the section shown in Fig. 2, which, it will be noted, has a somewhat strongly-marked inverse curve, this type being found the most efficient of many that I have tried. Whether for a model in which duration of flight has to be obtained in conjunction with a quick rise

from the surface of the water it is superior to the type given in FLIGHT of July 6th I am not yet prepared to say. To those who have not yet taken up model hydro-aeroplaning we can certainly recommend it as the most fascinating, not to say exciting, branch of model aeroplaning as yet developed, combining as it does all the delights and excitement of a water sport with the ordinary joys of model flying.

Model Flying in Australia.

We have received the following account from Mr. H. P. Wood, of Mount Albert, Melbourne, concerning some recent flights made by him:—

"Since writing you last I have had an extraordinary flight with one of my models, which I think will be of more than usual interest. It occurred on the morning of May 5th, the weather being beautifully fine and warm, with an almost imperceptible following wind. After launching the machine in the usual manner it flew a considerable distance (somewhere about 600 yards, I should say); the power then ran out, and instead of starting to glide down as usual, it began to ascend in large sweeping circles, until it was only with the aid of a pair of field-glasses that it could be kept in sight. Eventually it landed 1,560 yards from the starting-point, and was in the air for 9 mins. The time was carefully taken, and the distance measured in a straight line from start to finish. I think it clearly shows that my machine got into an ascending air current, as it showed not the slightest inclination to come down when the propeller stopped revolving. As this flight might seem almost incredible, I have obtained the signatures of those who witnessed it. The machine itself is my own design and construction entirely, the only portion not manufactured by myself being the rubber. It is the thirty-third



Mr. H. V. Wood and his model.

model I have built in the last three years. Principal dimensions:—

"Length of fuselage (triangular)=4 ft.; span of main plane=4 ft.; chord of main plane=7 ins.; span of elevating plane=1 ft. 8 ins.; chord of elevating plane=4 ins.; diameter of each propeller=11 ins.; pitch of each propeller=19 ins.

"Each propeller is driven by 8 strands of $\frac{1}{4}$ -in. strip rubber (Warburton, Allen and Co.'s, of Leicester). Weight of complete machine=9 ozs.

"The following is a table of my longest flights with this machine:—

No.	Date, 1912.	Revs. to each propeller.	Distance flown in feet.	Duration in secs.	Remarks.
1	Feb. 18th	750	1,410	62	Straight flight. Gusty wind
2	Mar. 2nd	810	2,160	55	Straight flight. Strong wind
3	Mar. 24th	820	2,000	83	Dead straight. Calm
4	Mar. 31st	1,000	1,779	118	Circular flight. Calm
5	April 13th	820	1,875	*	Dead straight. Calm
6	April 14th	820	1,350	67	Semicircular flight. Strong wind
7	May 5th	1,000	4,680	540	Circular flight. Almost calm
8	May 12th	940	1,788	148	Circular flight. Calm
9	May 12th	940	2,688	230	Straight. Dead calm

* No time taken.

"All distances measured in a straight line from start to finish, and times accurately taken.

"We, the undersigned, have pleasure in stating that the facts, as contained in H. P. Wood's letter, in reference to the 9 minute flight, are correct in every particular.

"D. MANSFIELD.
"W. MAYNARD.
"G. MAYNARD.
"G. A. KENT."

THE KITE AND MODEL AEROPLANE ASSOCIATION. OFFICIAL NOTICES.

British Model Records.

Hand-launched	Distance ...	A. E. Woollard	477 yards.
	Duration ...	A. F. Houlberg	89 secs.
Off ground	Distance ...	F. W. Jannaway	84 yards.
	Duration ...	G. Rowlands	30 secs.

Officially Observed Flights.—On July 13th official observers attended the ground of the Blackheath Aero Club, viz., Seven Fields, for the purpose of observing flights for distance and duration for registration and establishing records. The observers were T. W. K. Clarke, A.F.Ae.S., F. W. Pringuer, and W. H. Akehurst, hon. sec. The results were as follows:—Distance, hand-launched—A. E. Woollard, 477 yards; L. Connolly, 146 yards; J. H. Dollittle, 106 yards. (These are corrected for wind velocity.) Distance, off ground—F. W. Jannaway, 84 yards. There were other entries, but were scratched after one or two flights. It is pleasing to the Council to see that the observers visit the various clubs that the records are beaten by club members. On Saturday

Replies in Brief.

A. V. RICE.—Mr. Bragg-Smith's address is 44, Caithness Road, Mitcham, Surrey.

D. CAMERON.—We cannot deal with your letter as such, but will refer to the subject in an early issue.

H. J. EVERETT.—Many thanks for photos, which are extremely good considering their small size.

the hon. sec. of the Blackheath Club upheld the honour of his club by beating Mr. Rowlands' distance of 429 yards.

Model Competition.—To be held on the 100-acre field, Greenford (station, Perivale Halt), Saturday, July 27th, at 3 o'clock. Longest flight competition for models. (Open to the world.) Previous holders, E. W. Twining, 1910, Cyril Ridley, 1911. Prizes: 1st, challenge cup and gold medal, presented by A. W. Gamage, Esq.; 2nd, silver medal; 3rd, bronze medal. Free to members. Non-members' entrance fee, 1s. Rules: 1. Competitors may submit models of any kind. 2. Competitors must be at the judges' flag at 2.45 sharp. Those not present at that time will be disqualified. 3. Reasonable repairs will be allowed at the discretion of the judges. 4. Models may be started by hand or under their own power. 5. Each competitor is entitled to three trials, if time permits. 6. The length of flight will be measured in a straight line, from starting point to alighting point, and not along the line of flight. Entries close first post Saturday, July 20th.

27, Victory Road, Wimbledon.

W. H. AKEHURST, Hon. Sec.

PROGRESS OF FLIGHT ABOUT THE COUNTRY.

Model Clubs: Name of District only given. In brackets: Secretary's address.

Notes regarding Clubs must reach the Editor of FLIGHT, 44, St. Martin's Lane, London, W.C., by first post Tuesday at latest.

Aero-Models Assoc. (N. Branch) (15, HIGHGATE AVENUE, N.).

SATURDAY. Second-class certificates obtained by Messrs. H. E. Fletcher, B. Brown, and M. B. Ross. For this certificate a model must fly for at least 20 secs., and in that time cover a minimum distance of 150 yards. Official durations taken were:—1, H. E. Fletcher, 52½ secs.; 2, B. Brown, 48½ secs.; 3, M. B. Ross, 42½ secs.; 4, C. V. Langland, 27½ secs. W. E. Waring, with a small single screw mono., obtained flights up to 22 secs. Rising-from-ground formula competition shortly for Pidsley challenge cup, and hydro-aeroplane competition contemplated. Saturday, 27th, first monthly competition at Finchley for duration and prize of goods, value 3s. 6d. To-day (Saturday) flying at Finchley and Palmer's Green. G. Pedsley, Esq., mentioned last week, should be G. Pidsley, Esq.

Bath and Somerset Aero Club (11, ELM PLACE, BATH).

A MODEL contest and glider exhibition will be held on August 10th, at 3.30 p.m., at Claverton aero camp, adjoining Norwood Farm, Bathwick Hill, by permission of Mr. Patrick V. Alexander. Admission free. Events (prizes in cash and goods for each competition): 1. Direction control. 2. Distance. 3. Gliding-angle (after propeller stopped). 4. Speed (100 yards' course). 5. Duration. 6. Stability. 7. Best all-round model (club members only). For full particulars apply (enclosing stamped addressed envelope) to hon. sec.

Birmingham Aero Club (8, FREDERICK ROAD, EDGBASTON).

ENTRIES for August Bank Holiday competitions close July 22nd. The following clubs will be represented in the Inter-club Contest:—Aero Models Association (North Branch), Coventry, Paddington, Worcester, and Birmingham. Admission to the ground 3d. Tea provided for all competitors. For particulars of entrance fees and competitions see two previous issues of FLIGHT. Flying exhibition by club at Hampstead Hall last Saturday. First trials Mr. Trykle's full-size glider probably Saturday, on Club Aerodrome, at Billesley Farm.

Blackheath Aero Club (48, HAFTON ROAD, CATFORD, S.E.).

ON Saturday K. and M.A.A. trials, recorded elsewhere, at Grove Park. Both off-the-ground distance and the hand-launched distance records were broken. Messrs. Dollittle, Morgan, Whitworth and Plummer flying their various types of model. Wind varied between 5 and 12 m.p.h. Flying next week-end at Grove Park and Blackheath.

Bristol Model Flying (3, ROYAL YORK CRESCENT, CLIFTON).

JULY 13TH, good rising-from-ground flights and landings by Lee's 10-oz. large surface biplane. Long high flights by Howse, Pearse and Smith. Meeting to-day, July 20th at Sea Walls, at 3 p.m.

Cardiff Aero Club (114, MISKIN STREET, CATHAYS).

JULY 8th, good flights by R. Cox, W. Weeks, F. Crouch, and J. Jenkins. Special affair on 22nd; for particulars apply hon. sec.

Croydon and District Aero Club (Sec., 158, HIGH STREET).

SATURDAY, Messrs. C. and H. Smither carried off two first prizes at local exhibition for workmanship and original design. Judge, Mr. Sanders, of Aerial Cruiser Co. Workmanship, 1 in. scale Avro biplane, military type and design, single-screw tractor rise-off. During afternoon, Mr. C. Smither obtained flight of approx. ½ mile, with 1 sq. ft. twin propeller model. Sunday, Mr. H. Smither had good straight flight of quarter mile exact with floating tail type. Other flying, Messrs. Brown, Roden, W. Bell (4 ozs., 33 in.), H. Smither (6 ozs., 33 in.). Flying next week, Waddon and Duppas Hill.

East Ham and District (54, SAVAGE GARDENS, EAST HAM).

At Blackheath, Sunday, Bedford (Twining) best, 43 secs., Chaffy (Mann) 48 secs., Sharp (own type) 55 secs. (8 secs. better than previous club record); 1,320 ft. approx., also club's best. Invitation was accepted to revisit for next Sunday. Flying New Beckton, to-day, Saturday, 3 p.m.

Folkestone Model Ae. Club (25, BOURNEMOUTH ROAD).

JULY 10TH, members of Dover club visited Folkestone flying group's at Park Farm, including Messrs. Davis, Sergeant (Dover), Black, Silk, Wybone and Hart (Folkestone). Chief item point-to-point race. In evening, Mr. L. Black, with 3-oz. model, got 30 to 38 secs. and 80 ft. altitude. Flying every Wednesday and Saturday at Park Farm.

Hackney and District (THE HOLLIES, JENNER ROAD, N.).

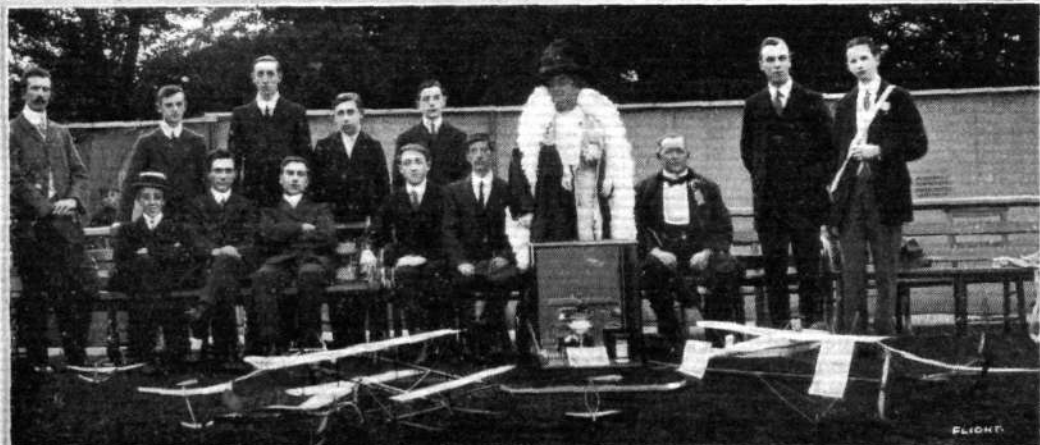
OFFICIAL durations Saturday.—Bond, 30 secs. (1-1-0 P1); Dore, 45 (1-1-0 P2); Barton, 25. Next meeting Spensley Hall, August 2nd—competition for monoplane design. Next week Longstaffe duration competition.

Maidenhead (FORD'S COTTAGE, PINKNEY GREEN, MAIDENHEAD).

FIRST meeting held Saturday, Humphreys doing good flights, other members tuning up. Meeting to-day, 6 o'clock.

Paddington and Districts (77, SWINDERLY ROAD, WEMBLEY).

DURATION contest (sealed handicap) last Saturday:—1st, Mr. C. Dutton, receives 17 secs., 81½ points; 2nd, Mr. F. Lane, 12 secs., 71 points; 3rd, Mr. A. Cannell, scratch, 60 points; Mr. Davidson, 25 secs., 57½ points; Mr. Chalfont, 9 secs., 55 points; Mr. Carter, 22 secs., 50½ points; Mr. S. Wood, 25 secs., 42½ points; Mr. Woolley, 12 secs., 32 points. Duration averages: Mr. A. Cannell's average now 63½ secs. To overcome the difficulty of timing models which disappear from judges' view, the club has decided to appoint an official signaller, whose duty will be to signal, by means of a white flag, to the judges when a model comes to earth or otherwise lands. Flying to-day (Saturday) in fields top of Eagle Road, Wembley, when the monthly duration competition for silver and bronze medals takes place.



Bristol Model Flyers.—Group taken by one of the competitors at the competitions at the G.C.C. fête. (Standing) Left to right: H. Griffiths, J. Keyte, N. Gordon Stephens, J. W. Haig, N. W. Edgar, Mrs. Beloe, C. W. Tinson,* R. V. Tivy (Hon. Sec.). (Sitting): E. Martin, W. A. Smallcombe,* H. G. Lee,* R. T. Howse,* A. E. Pearse,* H. W. Beloe (Chairman of the G.C.C.). (* = prize-winner.)

CORRESPONDENCE.

* * The name and address of the writer (not necessarily for publication) MUST in all cases accompany letters intended for insertion, or containing queries.

Correspondents communicating with regard to letters which have appeared in FLIGHT, would much facilitate ready reference by quoting the number of each letter.

Aeroplanes v. Dirigibles.

[1598] To take K.A.H.'s points in letter 1589 one by one, I would submit that the lives of the crew of an airship in war time are of no more consideration than that of any other fighting men. It is no use having air or water craft in the highest state of efficiency unless they are used, and their use means that we must expect to lose some or all of them. Were it necessary we should not hesitate to sacrifice a number of torpedo craft on the attack of a hostile fleet or base, therefore why should we hesitate to risk airships of one quarter the cost of a destroyer and carrying less than a quarter of the crew? There is no doubt that the dropping of explosives betrays the position of the airship at the moment, but if her mission is successfully accomplished this is relatively unimportant.

As regards dropping heavy weights, if a 20-ton airship drops 5 per cent. of her displacement (1 ton) it would not materially affect her, i.e., she would not suddenly ascend to a great height and lose a lot of gas, whilst it should be noted that if she is proceeding at some 35 knots through the air at the time her aeroplanes and horizontal rudders are capable of giving her more than a ton of negative or positive buoyancy (or more correctly, lift) instantly.

If an aeroplane could do all that an airship can, and if it can easily destroy an airship I should quite agree with K.A.H. that it is useless to develop the latter. We know, however, on some points the aeroplane scores and in some the airship, even if we regard them as scouting machines only; whilst we shall have to wait for the next war to decide whether one type or the other will be supreme for fighting purposes. At present there is no reason to suppose that things will not work out as they have on the water, where the destruction of a few torpedo craft is nothing to the destruction of a battleship, so that K.A.H. and I can agree on his concluding paragraph in which he says that the destruction of a few aeroplanes would be nothing to the destruction of an airship, hereby for the first time, acknowledging their relative importance.

Up to date no Zeppelins have been destroyed in the air, their loss in every case has been due to the mooring arrangements adopted, or to attempts to get them into or out a shed in a breeze. No one would be so mad as to try and get a Dreadnought into a narrow dock with a 4-knot tide flowing across the entrance, nor would they attempt to moor her in a tideway by sending divers down to hang on to her keel. When the mooring problem is properly solved the airship will come into its own, and everything points to the method adopted for the Naval airship at Barrow being on the right lines.

Finally I must congratulate K.A.H. on not suggesting that there may be a use for airships "escorted and guarded by aeroplanes." Many people when discussing this question jump to this brilliant conclusion forgetting that the chief function of the airship is to cruise in regions far beyond the radius of action of any aeroplane, and that if operating within their radius the chief advantages of the aeroplane—speed and ease of concealment—are destroyed whilst their radius of action is curtailed through their having to fly in circles to remain in the neighbourhood of the airship.

PER MARE PER AERA.

Natural Stability.

[1599] With reference to the stability of aeroplanes, I quite agree with one or two of your correspondents—that to depend entirely on natural stability would be dangerous in a sudden emergency—where perhaps a slight additional warp or other control would save the whole situation. I have experimented for some months past with planes, and my present design 36 in. span—and latest 58 in. span—both possess the same remarkable natural stability. My idea seemed to be pure common sense and was founded on the principle of leverage, i.e., by having rather excessive cambered portions, about 45 to 50°, very much removed from centre of plane, the rest of plane being only slightly cambered.

It will readily be seen that the body of the machine is practically the fulcrum of the lifting action of either camber, the latter having enormous power when diverted from the horizontal.

A friend and I have tried both large and small models under the most trying wind conditions, and have not yet succeeded in capsizing either machine, the wind being strong enough to smash the steel wiring from king-post. The machine is very fast—will rise to 80 ft. or more (fully that amount).

I do not wish to point the matter out as being in any way ingenious—I wanted a model that would fly in any wind, and it

was the means to an end—but as far as my very small knowledge goes, I see no reason whatever why this idea should not be adopted on a full size monoplane, as warping or other control could still be used if required. The only thing that will upset these models is a mal-adjustment of elevator causing machine to assume too vertical an angle; that is only to be expected.

Shanklin.

VERNON L. ADDISON.

P.S.—I noticed that when machines landed rather hard on rough ground that the rebounding action of the planes due to the shock, had a decided detrimental effect to the wiring from king-post, the under stays remaining intact.

V.L.A.

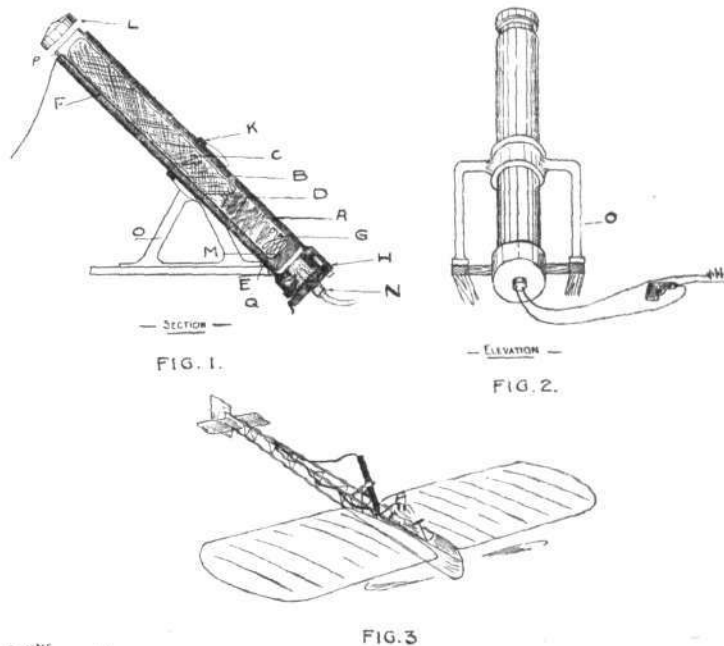
Parachutes for Aeroplanes.

[1600] May I trespass on your valuable space by submitting to those interested in flight, a sketch of an appliance which would minimise the risk run by airmen when piloting their machines?

Fig. 1 shows a parachute, C, with its nettles, D, and about 15 ft. of flexible wire rope, G, coiled in a "figure of eight" style, to prevent entanglement, placed compactly into an asbestos or other fireproof canister, B, which is partially split through between the points P and Q.

The bottom coil of the rope is securely fixed to the stout base of the tube at M. The free rope, F, is passed upward inside the tube (laying along the weak split line of the tube) and is taken to the after part of the body of the aeroplane, thence forward—being carried readily by releasing spring clips—and finally fixed to suitable leather gear worn by the aviator.

The asbestos tube, together with its contents—forming, as it were, a projectile—is placed into an aluminium tube, A, fitted at its base with a breech block, H, and an electric firing arrangement (the two wires of which, being passed inboard, connecting a battery and a pistol-grip firing key).



Into the breech is placed a charge of explosive.

The whole is supported on the body of the plane abaft the pilot by a 45° U bracket as shown.

The asbestos tube is supplied with a cover to shield the parachute from inclement weather.

Should an airman lose absolute control over his machine when in the air, and commence falling to earth, the trigger of the pistol-grip would be pulled.

By this simple operation the charge in the breech explodes and ejects the asbestos tube upward, pulling with it the wire from the spring clips along the body of the aeroplane.

The rope becomes taut and tears its way through the split side of the tube. Since the wire is fixed to the base of the latter, the flight of the tube is suddenly arrested.

By the law of momentum the parachute leaves the tube, continuing its flight upward until all the coils of wire are run out.

By this time the pilot, together with his machine, is falling with sufficient velocity to reverse the direction of flight of the envelope with such speed as to open the parachute immediately. The airman not being strapped to his machine is lifted from it and is gently lowered to earth with comparative safety.

Mr. Hearne, in his article in *Fry's Magazine* of last August, says that "all aeroplane failures do not occur close to earth, and if a quick-acting apparatus could be devised, it might prove very useful as a safeguard."

Nairobi, British E. Africa.

FREDERICK J. GOSDEN.

RECENT BOOKS.

DURING the past few weeks three or four books of considerable interest have been published, which many of our readers will doubtless like to place in that section of their libraries reserved for aeronautic literature. This same section by the way should be assuming a much more attractive appearance than it had a few years ago, for if we may judge from our own shelves, which now exist in a state of overcrowded untidiness, we should say that even a moderate bibliophile must already be making a very presentable show.

The works that we have under review at the moment seem to form a kind of graduated scale of reading, which, starting with simple history, rises crescendo to a pure mathematical note in a book by Prof. G. H. Bryan on "Stability in Aviation." How many of those who buy a work of this character really sit down with serious intention of mastering its contents, would itself form a problem scarcely less abstruse than some of those that the author attacks with a full broadside of equations. Nevertheless, there is this to be said for Prof. Bryan's book, which should encourage some among the less enthusiastic mathematicians to acquire it as a standby, which is, that it has its summary at the beginning instead of at the end. In too many of these mathematical works, there is no summary worth speaking of at all, and although the student will not find in the first eighteen pages of Prof. Bryan's book a ready-made plan of a completely stable aeroplane, yet he may succeed in feeling a little more at home with his subject before striking out into the sea of abstruse calculations that form the main portion of the text. There is at least one class of reader who should go in not only undaunted but with some feeling of joy, and it is to him in particular that the author appeals when he remarks how "any honours student who devotes a year or more to a systematic study of hydrodynamics will, at the end of that time, have little prospect of finding any problem practical or unpractical which has not already been solved and which he can approach with any reasonable chance of obtaining a solution or results worth publishing. The present subject, on the other hand, literally bristles with unsolved problems, and the difficulty is not so much that the problems are insoluble as that their solutions are long and tedious. For this reason it is important that the number of persons interested in the subject should no longer be merely countable on the fingers of one hand."

In the "Mechanics of the Aeroplane," Capt. Duchêne has written a meritorious book of the simple scientific order that it would have been a pity to have confined solely to those whose familiarity with written French includes a sufficiently wide technical vocabulary to enable them to peruse a treatise of this kind in its original language with interest, pleasure and profit. Capt. Duchêne's work, however, has been translated into English and its field of interest thereby extended; moreover, the names of its translators give confidence to the student in his anticipation of a usefully spent hour or so of study. We know of none better fitted to undertake the work of dealing sympathetically, if we may use the expression, with an original aeronautic treatise than Mr. J. H. Ledebour and Mr. T. O'B. Hubbard. Both are students themselves and both are possessed of the editorial experience and facility of expression that is necessary to the successful accomplishment of the task such as they have just undertaken. In translating the "Mechanics of the Aeroplane" they have ably assisted the author in placing on our English bookshelves a new work that is well worthy of being there.

With whatever indifference we may cast an eye upon the doings of the feathered denizens of our universe, the fact remains, as the author of "The Flight of Birds" remarks, that they are still the master pilots of the world. Mr. F. W. Headley has been a close student of bird flight for a long while and he is to be numbered among those who have combined an appreciation of the advantages of the camera as an automatic recorder of visual impressions with a singular dexterity in its practical use. Of the contents of his book there is nothing that surpasses the merit of his photographs. Those taken of pigeons at close quarters form a wonderfully fascinating collection of bird flight studies. As the author of "The Structure and Life of Birds" Mr. Headley naturally has something to say about the machinery of bird flight, and perhaps the following abstract from the chapter devoted to the scaffolding of the wing "may serve to interest readers in this book who might not other-

wise be tempted to acquire what they may be inclined to believe is merely another book about birds."

"The scaffolding of the wing is itself very light, the thickest of the bones, the humerus, is hollow in big birds that are strong on the wing. In some, the bones are hollow right to the finger tips; there is an opening in each bone at the near end; a thin pulmonary membrane enters there and thus they are filled with air that has passed through the lungs . . . the fact that large birds have more aeration than small demands explanation. The small bird would gain but little in lightness, since each bone consists almost entirely of its exterior shell."

And, finally, having descended the literary scale in so far as the scale is a measure of the abstruseness of the subjects discussed, we come to the little history that has just been published by the Aeronautical Society of Great Britain. This little book has primarily been prepared for the purpose of putting on record in an attractive form, circumstances surrounding the foundation of this historic institution forty-five years ago when aviation was yet a dream. As a matter of fact, however, the author has taken the opportunity of tracing as a connected story, the outline of the history of the aeronautic movement from the end of the eighteenth century to the present time. Several readers of *FLIGHT* have, we know, often felt the need of just such a little book as this, and the humble shilling that it costs could scarcely be better spent, seeing that the book in question has been so attractively produced and contains so much that is both interesting and valuable. For one reason, if for no other, it should be possessed by all, which is that the information it contains is published under an aegis, that is a guarantee of accuracy, and as much of the early history of aviation is so apt to be misrepresented by writers who are not quite sure of their ground, it is of the utmost consequence that the interested reader should have a reliable book of reference with which he can make himself once and for all time acquainted with the facts.

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Published July 18th, 1912.

15,058. A. DOUTRE. Aeronautical machines.

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